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THE JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY AND ALLIED DISCIPLINES

Official Organ of the Association of Child Psychology and Psychiatry

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1. This journal is primarily concerned with child psychology and child psychiatry, but it is recognized that many other disciplines have an important contribution to make in furthering knowledge of the mental life and behaviour of children. In the absence of a unified body of generally accepted fact and theory in this field, an important function of the journal is to bring together contributions of a high quality, springing from different points of view, in order to promote an eventual integration. Relevant papers will accordingly be welcomed from such related fields as animal behaviour, anthropology, education, family studies, paediatrics, physiology and sociology.
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VOL.
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VOLUME 2

LIST OF CONTENTS

NUMBER 1

SUSANNA ISAACS: Obituary: Melanie Klein 1882–1960 1

JESSIE M. WILLIAMS: Children who break down in foster homes: A psychological study of patterns of personality growth in grossly deprived children 5

TERENCE MOORE and L. E. UCKO: Four to six: Constructiveness and conflict in meeting doll play problems 21

T. R. MILES: Two cases of developmental aphasia 47

JOHN EVANS: Rocking at night 70

IAN S. BERG: A case study of developmental auditory imperception: Some theoretical implications 85

Book Reviews 93

NUMBER 2

D. H. STOTT: An empirical approach to motivation based on the behaviour of a young child 97

K. LOVELL and E. OGILVIE: The growth of the concept of volume in junior school children 118

E. MARGARET MOORE: School visits: The role of phantasy 127

THOMAS PICK: Behaviour theory and child guidance 136

D. WALTON: Experimental psychology and the treatment of a ticqueur . 148

WILLIAM C. ADAMSON, ALEXANDER HERSH and WILLIAM T. CREASY: Some psychological aspects of the management of the brain-damaged adolescent in a residential setting 156

Book Reviews 165

NUMBER 3

G. Stewart Prince: A clinical approach to parent-child interaction . 169

Raymond G. Hunt: Age, sex and service patterns in a child guidance clinic 185

Morris A. Cunningham and Cynthia Dixon: A study of the language of an autistic child 193

William R. Morrow and Robert C. Wilson: The self-reported personal and social adjustment of bright high-achieving and under-achieving high school boys 203

R. S. Illingworth: The predicative value of developmental tests in the first year, with special reference to the diagnosis of mental sub-normality 210

G. Koupernik: "Maturation"—A report on the First European Congress of Paedopsychiatry 216

Book Reviews 224

NUMBER 4

Leon Eisenberg: The strategic deployment of the child psychiatrist in preventive psychiatry 229

Daniel G. Freedman: The infant's fear of strangers and the flight response 242

Mary Woodward: Concepts of number of the mentally subnormal studied by Piaget's method 249

Sulammith Wolff: Social and family background of pre-school children with behaviour disorders attending a child guidance clinic . . 260

Sulammith Wolff: Symptomatology and outcome of pre-school children with behaviour disorders attending a child guidance clinic . . 269

Patricia Honig, Elizabeth Long and Richard Meyer: A youth club for psychiatric out-patients 277

Book Reviews 286

AUTHOR INDEX

Adamson, W. C. 156
Berg, I. S. 85
Creasy, W. T. 156
Cunningham, M. A. 193
Dixon, C. 193
Eisenberg, L. 229
Evans, J. 70
Freedman, D. G. 242
Hersh, A. 156
Honig, P. 277
Hunt, R. G. 185
Illingworth, R. S. 210
Isaacs, S. 1
Koupernik, G. 216
Long, E. 277
Lovell, K. 118
Meyer, R. 277
Miles, T. R. 47
Moore, E. M. 127
Moore, T. 21
Morrow, W. R. 203
Ogilvie, E. 118
Pick, T. 136
Prince, G. S. 169
Stott, D. H. 97
Ucko, L. E. 21
Walton, D. 148
Williams, J. M. 5
Wilson, R. C. 203
Wolff, S. 260, 269
Woodward, M. 249

VOL.
2
1961

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OBITUARY: MELANIE KLEIN 1882–1960

SUSANNA ISAACS

VOL. 2 1961

TOWARD the end of her life, when she knew she had an illness that might prove fatal, Melanie Klein made an assessment of her life's work and declared herself "not dissatisfied". But she always wished she had been able to qualify as a doctor, for she felt it would have increased her scope and responsibility and might perhaps have meant that she was listened to more readily. Although she never attained that youthful ambition, her discoveries brought about great changes of attitude and method in psychological medicine and related fields. The widespread influence of her work is hard for us, her colleagues and contemporaries, to appreciate in its entirety, but it is clear that she was the most original and creative psychoanalyst since Freud.

Melanie Klein was born in 1882, the youngest child of a Viennese Jewish family. Her father was a doctor who practised mainly dental surgery. He was already in his fifties when she was born, and seemed a somewhat remote figure to the admiring little girl. She was devoted to her able and understanding mother and remained so, nursing her through her last illness in 1914. In the setting of this hard-working and gifted family Melanie encountered tragedy young. One of her sisters fell ill of tuberculosis and died at the age of nine after a year's illness. The dying child spent a lot of time with her little sister and tried to teach her all she knew. Thus Melanie Klein's scholastic career started at an early age; she was only five when her sister died, and she could already read and write.

Her only brother was five years her senior and encouraged her greatly by his firm conviction that she had unusual gifts which she should develop and use. He was himself a gifted boy, interested in music, art and literature. He suffered from heart disease and was expected to die young, an expectation which was sadly fulfilled when he died at the age of twenty-five. He had wanted to study medicine but had been unable to do so.

Melanie Klein very much wanted to be a doctor and worked at school toward that end, but she got engaged at seventeen and never studied medicine. She went to courses in art and history at Vienna University until her marriage at twenty-one. She had three children. In her thirties she was drawn to psycho-analysis, stimulated by a personal need for help and a strong drive to understand and help others—particularly children. She was in analysis first with Ferenczi and later with Abraham. Both analysts contributed to the abundant development of her intellect and imagination. Ferenczi first encouraged her to work with children. Abraham's own work on depressive illness had led him to a new understanding of oral impulses as a source of mental pain and conflict; knowledge which he was able to pass on to Melanie Klein

for her to develop. It was not until she was thirty-nine, in 1921, that she began to formulate her own technique for child analysis, which has yielded such a wealth of understanding. Eleven years later, in 1932, she dedicated her first book *The Psycho-Analysis of Children* to Karl Abraham "in gratitude and admiration".

She came to England in 1926 and the rest of her more than forty years of courageous and exhaustive searching for the truth about the human mind was made in this country. Ernest Jones invited her here as he had invited Freud because, true to character, he recognized her genius. We count her as a British psycho-analyst, one who has profoundly influenced the thought and work of her colleagues in the British Psycho-Analytic Society.

Melanie Klein's work was a direct and logical extension of Freud's psycho-analytic method, to the study of the minds of young children. She discovered that in free, undirected play children show the details of their unconscious phantasy life. Thus the play of children, in an analytic setting which provides them with suitable play material, is equivalent to the verbal free association of adults. Similarly she found that, by verbal expression of the unconscious phantasies revealed, the analyst can enable even children between two and three years old to understand the reasons for their fears. This knowledge of unconscious motives can be used by children as well as adults in developing a capacity to deal more realistically and constructively with the demands of the external world. The child's psycho-analyst does not need to add educational influence to his function of interpreting the unconscious.

Melanie Klein had a deep respect for human beings, from the tiniest infant to the oldest adult. She thus took babies and young children seriously, and was one of the first psychologists to perceive that they may suffer from very severe anxiety. It was the observations she made, in an effort to understand the fears and depressions of psychologically ill children, which led her to formulate her theory of human emotional development. By the analysis of normal children and adults she was able to confirm her hypothesis that overcoming anxiety of a psychotic type is as inevitable and essential in normal development as Freud had found overcoming the neurotic anxieties of the 'Oedipus complex' to be.

She deduced that in the first few months of life anxiety is predominantly persecutory, the baby feels itself to be in great danger. Later in development, between four and nine months, it begins to experience fear that it can harm the very things it most loves. It is important to note that Melanie Klein stated that infantile anxiety, when it is experienced, falls into one or other of these main categories. She never claimed that a human infant is in a state of perpetual anxiety, though she did recognize that unbearable anxiety can be stimulated much more easily than had been realized. She called these two main types of anxiety 'paranoid-schizoid' and 'depressive', terms which have descriptive value and also make clear their importance as 'fixation points' for later psychotic illness. For she saw clearly the relevance of her discoveries to the problem of psychosis in adults and children. The years of detailed work which went to building up this understanding are described in many papers, but two of particular importance are *A Contribution to the Psychogenesis of Manic-Depressive States*, 1935, and *Notes on Some Schizoid Mechanisms*, 1946.

The extreme intensity of infantile anxiety was seen by Melanie Klein to be directly related to the violence of oral sadistic phantasy. The attacks feared by the

baby in a state of persecutory anxiety are terrible because it is in terror of its own aggression, which has been disowned and projected outwards. Similarly, depressive anxiety is intense because all the good things which the baby loves, in its world (which is of course primarily the mother at this age) and in itself, are threatened by the cruelty and sadism which it now begins to see are its own.

The details of the extremely sadistic nature of early infantile aggression were horrifying to many people. This was one of the causes of the bitter hostility with which Melanie Klein's work was received. The idealized picture of the mother-child relationship, which to some extent even Freud cherished, was felt to have been attacked, and with it the individual's fantasy of himself as the perfect baby.

Because she discovered the vital part infantile sadism plays in normal and abnormal development she was widely looked on as ignoring the loving side of human nature. This is clearly a misunderstanding, as anyone can see who reads her many published works. But the influence of the myth of Melanie Klein was hard to escape, so that one's first seminar with her was a quite extraordinarily enlightening experience. Not only did one see at work a woman of great charm and intellect but one who was continually concerned to point out how the patient's aggression was important because it prevented him from using the good aspects of himself. Her latest book, *The Narrative of a Child Analysis*, should give that awareness of the real Melanie Klein to very many people.

VOL. 2 1961

The use and misuse of aggression is the paramount problem of personal development and of our civilization. How can we come to terms with it, so that the hardly-used creative gifts of human beings can be developed? Melanie Klein left us asking questions, as all great scientists do. But she gave us many answers, which we are still trying to understand, use and develop.

One psycho-analyst, who very early associated herself with Melanie Klein's work, has had a revolutionary effect on child care and the education of the young in this country. I refer, of course, to Susan Isaacs who died in 1948. Her works are still alive, relevant and exhaustively used in the training of psychologists, teachers, social workers, child care officers and nurses. Other colleagues form a small but vigorous group whose work takes Melanie Klein's ideas, develops them and introduces them into mental hospitals, child guidance clinics, hospitals for adults and children, and industry. There are, too, many private homes where the help that has been given to ill children and adults is deeply valued. These patients include many once considered to be too young or too old or too ill to be within the reach of psycho-analytic help.

It is only fairly recently that knowledge and understanding of her work has begun to spread widely in the psychiatric field, at home or abroad. Wilfred Trotter once remarked "the most powerful antigen in the world is a new idea" and the truth of this was all too familiar to Freud and Melanie Klein. She faced what was sometimes bitter hostility with characteristic courage. She tried always to give criticism just appraisal, was assiduous in self-analysis to the end of her life and welcomed honest appreciation. It is sad that her fatal illness prevented her from making her first trip to lecture in the United States.

She had a great zest for life. She was able in later years, as in childhood, greatly to enjoy the pleasures of family life. One son came with her to England, and it was

with him, his wife and their children that she found so much happiness. Her own marriage had not been a happy one, her eldest son died when a young man and she was estranged from her daughter in later life. Despite these sorrows, or perhaps because they gave her an impetus to seek further understanding, she was a prodigious worker. She was seeing patients and writing until a few weeks before her death at seventy-eight, on September 22nd 1960.

It seemed to me, as a very junior member of her group, that she was happier in her last years and able to allow herself to relax more. She loved the theatre, music and conversation. She greatly enjoyed the stimulating companionship of people from other professions, particularly younger devotees of her work from the realms of literature, art, philosophy and music. They were drawn to her not only by her fascinating personality, but because they so greatly valued her discovery of the link between creative expression and the individual's ability to cope with his earliest anxiety situations. What we value most about being human arises from our attempts to deal constructively and responsibly with the grief and guilt of the 'depressive position'.

The persistent and painstaking search for truth and the therapeutic application of her discoveries was Melanie Klein's life-work. Her courage and honesty are an inspiration to those who would like to protect and develop her ideas, however humbly. There is no need for idealization; her many books and papers speak for themselves. We shall miss her lectures, teaching and discussion as well as her feminine charm, her humorous chuckle and her great perspicacity.

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CHILDREN WHO BREAK DOWN IN FOSTER HOMES: A PSYCHOLOGICAL STUDY OF PATTERNS OF PERSONALITY GROWTH IN GROSSLY DEPRIVED CHILDREN

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VOL. 2 1961

INTRODUCTION

DURING the past twenty years there has been an increasing recognition of the importance of certain factors in early experience on the course of later personality development. Bowlby's monograph (1951) on *Maternal Care and Mental Health* brought together findings from his own research studies and those of workers in all parts of the world. From the evidence of these studies Bowlby stated that "what is believed to be essential for mental health is that the infant and young child should experience a warm, intimate and continuous relationship with his mother (or permanent mother substitute) in which both find satisfaction and enjoyment".

Children who do not have this experience have, somewhat loosely, come to be designated as 'deprived' children. This may apply to children who have experienced long periods of separation from their mothers in the crucial years of infancy, children who, while remaining in their own homes, have been cared for by a mother who has emotionally rejected them, or children who, having been reared in institutions, have never experienced the care of a mother or one constant mother figure.

More recent follow-ups by Bowlby (1956) have caused him to modify his early conclusions regarding the permanence of the damage suffered by so-called 'deprived' children.

Other work has extended the area of investigation to show the effects of deprivation on learning and intellectual growth; from the study of the behaviour of animals ethologists have introduced the concept of 'critical periods of development' during which certain behaviour patterns which affect future development are laid down. Most of these 'critical periods' occur very early in life. Clarke and Clarke (1960) have made a useful summary of "Recent advances in the study of early deprivation".

It is now generally recognized that there are considerable differences in individual vulnerability to the effects of deprivation. Nevertheless it is still a widely held view that the best kind of provision for a homeless child is in a substitute home as nearly representative as possible of a normal home and that this is better provided by boarding-out or fostering the child than by placement in a 'Children's Home'.

There are now, in England and Wales, some 28,000 children who have been placed in foster-homes by Local Authorities and probably many thousands more who have been placed in foster-homes by voluntary organizations or by private arrangement. It is not easy to obtain accurate figures of the number of children for whom fostering proves unsuccessful. Trasler (1960), who has made an extensive

study of problems of fostering, estimates that between one-third and two-fifths of all long-term placements are unsuccessful. Such failures in fostering cannot be regarded lightly. The effect is shattering to the child. It destroys his self-regard and consequently lessens his confidence in reaching out towards new inter-personal relationships. A failure in fostering also brings distress and disruption to the foster-home, both to parents and children.

The purpose of the research reported here was to investigate patterns of personality growth in children who have broken down in foster-homes. The particular object was to see how far it is possible to estimate the meaning and consequent value of some of the psychological tools at present available: (1) in providing insights into personality development of such grossly deprived children; and (2) in enabling prior identification of those children whose early deprivation has caused such deep damage as to raise doubts about the possibility of successfully fostering them in normal homes.

The tentative conclusions reached in relation to these two questions are set out later in this paper. They have been formulated from an intensive study of foster-home breakdowns in 54 children between the age of 5 and 11 years carried out over a period of 5 years, from January 1st, 1955, to December 31st, 1959. Breakdowns in early adolescence (which, in the particular Local Authority area investigated, accounted for 49·2 per cent of the foster-home breakdowns during this period) present different problems and do not form part of the present study.

Breakdown group

The Breakdown group consists of all children between the ages of 5 and 11 years who were placed in a Reception Centre following removal from their foster-homes if: (1) they had experienced a breakdown in fostering due to unsatisfactory relations between the child and his foster-parents during the defined five-year period; and (2) the foster-home from which the child had been removed could be rated as of at least average quality as a home for normal children.

The quality of the foster-home was rated on a five-point scale derived from independent assessments made by the child care officer who had been responsible for the placement of the foster-child plus, where possible, the judgement of another senior case-worker who also had first-hand knowledge of the home. A third independent judgement was made by Dr. Joyce Stephen, Psychiatrist to the Reception Centre, who made most of her assessments on the evidence of a personal visit to the foster-home after the child had been removed. She was able to visit and assess 79 per cent of the homes, but for the remaining 21 per cent the assessment had to be based on interviews with foster-mothers at a child guidance centre, supplemented by information regarding the home from visits by a clinic psychiatric social worker. These judgements are qualitative and most of them have also the disadvantage that they had to be made after the traumatic experience of the breakdown, but the essential qualities on which judgements should be based were discussed carefully and defined as clearly as possible.

The quality of the foster-home was assessed on the adequacy of its provision for a child's (a) material, (b) physical, (c) intellectual, and (d) emotional needs. In assessing (a) judgement was based not on the standard of material provision but rather on the adequacy of material comfort within the limits of homeliness, so that

often a better class home with good provision for material needs but where the demands for tidiness and cleanliness were rigidly high, was rated lower in this respect than a materially poorer home whose homely quality made it more congenial an atmosphere for a growing child.

In assessing (c), the satisfaction of the child's intellectual needs, the capacity of the parents to supply suitable stimulation for mental growth was regarded as an important factor. One child was omitted from the study sample because the foster-parents, who were highly intelligent, were judged quite incapable of understanding and tolerating the intellectual limitations of a child of low intelligence.

In assessing (d) the need for both the foster-parents and the child to derive emotional satisfaction from the relationship was taken into account. When this is not experienced by the foster-parents they begin to regret having taken the child, and this in turn activates feelings of guilt and a sense of failure. Children are sensitive to the feelings of adults who are in an intimate relationship with them and very soon they react to the insecurity of their situation by some forms of habit disorders or behaviour disorders. Although such disorders were the ostensible reasons given for requesting the removal of children in the group studied, it is not without significance that in respect of 49 out of the 54 children, that is 90 per cent of the total, the foster parents included in their account of their difficulties such remarks as: "He never showed any feeling for us" or "She didn't seem to care whether we loved her or not". Most of these remarks were embedded in descriptions of a very demanding child, who wanted attention but could not manage feeling relationships in which some return of affection was expected from him.

VOL. 2 1961

Four other children were omitted from the study sample. In two cases there was no evidence of unsatisfactory relations between the child and his foster-parents prior to the death of the foster-mother, which had led to a complete change in the structure of the home, making it impossible for the foster-father to care for the child. In one of the other cases there was not enough agreement between the psychiatrist and the child care officers regarding the quality of the foster-home. The other was omitted because it was generally agreed that the foster-home was below average on the basis of the specified new assessment. There were 54 children in the Breakdown Group, 20 children of 5 or 6 years, 14 children of 7 or 8 years and 20 children of 9 to 11 years. (See Table 1.)

Control groups

To select as control groups children whose foster-home placement appeared successful seemed at first the obvious course in making this study. Further consideration showed, however, that this would be of doubtful validity, as children who appear successfully fostered sometimes break down under extra stresses. To choose children who were undoubtedly successfully fostered, it would therefore be necessary to select children who had remained for many years in their foster-homes and were happily settled there, and in such a case any significant differences in test results between these two groups might be accounted for by the fact that the children in the Breakdown group were tested at the point of their foster-home breakdowns. Tests might therefore be said to produce results that depicted the children's temporary reaction to their immediate traumata and could be accounted for in that way.

For this reason, it was decided to choose as a Control group, those children who came into the Reception Centre for short stays during the same period as the children in the Breakdown group. These short-stay children came from their own homes and were placed temporarily in care because of some sort of crisis in the home which rendered their parents unable to care for them for a time.

The children used as Controls were, therefore, children who

(1) fell into the same age range as the Breakdown group

(2) came from a more or less continuous life with their own family

(3) needed temporary care owing to the illness or confinement of mother, housing difficulties etc., but remained in contact with the family and were likely to return home as soon as possible.

They had suffered trauma in consequence of the factors that had caused the separation from home and also by reason of the experience of being placed, even temporarily, in a Reception Centre. Many of them had poor home backgrounds, and the very fact that there was no relative or friend to whom the parents could turn in a crisis indicated in many cases that they were children from problem and rather rootless families.

It would seem reasonable to suppose, therefore, that any significant differences between the test responses of these children and those of the Breakdown group would point to factors other than those arising from the temporary effect of a traumatic experience. There were 74 children in the Control group, 21 children of 5 or 6 years, 18 of 7 or 8 years and 35 of from 9 to 11 years. Although, as will be seen from Table 1, the numbers in the groups were not large, this is not thought to detract materially from the value of the findings, in view of the representativeness of the groups and the consistency of the test results from individual to individual within the groups.

TABLE 1. THE COMPOSITION OF THE GROUPS

Group age	Breakdown group				Control group			
	Total	%	Boys	Girls	Total	%	Boys	Girls
5 and 6 years	20	37	13	7	21	29	12	9
7 and 8 years	14	26	7	7	18	24	9	9
9 to 11 years	20	37	9	11	35	47	18	17

Tables 2 and 3 summarize the history of the children up to the time of the foster-home breakdown which brought them into this study.

From Table 2 (a) it will be seen that 35 per cent of the children in the Breakdown group had been separated from their own mothers virtually from birth, and that 50 per cent were 6 months or younger at the time of separation.

TABLE 2. EXPERIENCE OF CHILDREN IN BREAKDOWN GROUP PRIOR TO FOSTER-HOME BREAKDOWN

	(a) Age of child at separation from own mother				(b) Age at which first fostered				(c) Total experience of Institutional Care			
Age (a) and (b) Length of time (c)	No. of children				No. of children				No. of children			
	5–6	7–8	9–11	Total	5–6	7–8	9–11	Total	5–6	7–8	9–11	Total
1 month or under	10	4	5	19			1	1				0
Over 1 to 6 months	3	2	3	8	1	1	3	5	6	2	1	9
Over 6 to 12 months	2	0	5	7	3	1	1	5	4	4	2	10
Over 1 to 2 years	4	4	1	9	5	4	3	12	6	4	1	11
Over 2 to 3 years	1	2	1	4	3	4	2	9	3	3	3	9
Over 3 to 4 years		2	2	4	7	1	2	10	1	1	2	4
Over 4 to 5 years			3	3	1	2	5	8			2	2
Over 5 to 6 years				0		1		1			1	1
Over 6 to 7 years				0				0			5	5
Over 7 years				0			3	3			3	3
Total	20	14	20	54	20	14	20	54	20	14	20	54

TABLE 3. NUMBER OF FOSTER-HOME PLACEMENTS OF CHILDREN IN BREAKDOWN GROUP

No. of foster-home placements	Age 5 and 6 No. of children	Age 7 and 8 No. of children	Ages 9, 10 and 11 No. of children
1	11	8	13
2	7	4	4
3	2	2	3

Two of the children, who were abandoned by their own mothers from birth, were cared for by a fairly constant mother-substitute, in one case the maternal grandmother and in the other a great-aunt, until 4 years old. They were then taken into Care because, owing to ill-health, the mother-substitute could no longer manage to care for the child.

Only 3 of the children in the Breakdown group had remained with their own mothers up to the age of 5 years and for 2 of these the quality of the mother-child

VOL. 2 1961

relationship was very much impaired. In the first of these 2 cases the child (illegitimate) lived in a mental deficiency institution where his mother, a woman of very low intelligence, was a ward maid. During her hours of work, he was left in the care of other people and went through the experience of being looked after by changing staff similar to that of an institution-reared child. The mother abandoned him when she left this job and he was then taken into Care. The second child (also illegitimate) was moved around from lodging to lodging and left in the care of various landladies while his mother went to daily work, until finally she was sent to prison for larceny. The child was then taken into Care and permanently lost contact with her.

The third, an illegitimate son of a professional woman, was boarded-out privately by her at the age of one month, but has retained a frail and intermittent contact with his own mother, though he has never lived with her.

From the details of their early history it is evident that the children in the Breakdown Group can be regarded as grossly deprived children.

Tests used

All the children were given the Wechsler Intelligence Scale (1949) for Children (W.I.S.C.) and the Rorschach Test (1922). Children in the 5 and 6 year group were also given the Children's Apperception Test (C.A.T.) (Bellak, 1949).

At a later stage in the study some children in the 5 and 6 and the 7 and 8 year groups were given the Bene-Anthony Family Relations test (Anthony and Bene, 1957). Though qualitatively it produced some interesting results, it was not possible to use it with all the children, since for many of them it aroused too much anxiety; also it only became available halfway through this study. These results will be discussed in relation to the main test findings.

For purposes of statistical comparison the story responses to the C.A.T. cards were divided in five categories. The writer is indebted to Mr. Terence Moore for the loan of the C.A.T. records of his pilot study group of the Child Study Centre Longitudinal Research Project, London, taken at the age of from 5 to 6 years. From these, and also from examination of 30 C.A.T. records taken from children judged by their teachers in school to be normally adjusted, it seemed that the most meaningful categories were as follows:

(A) Those stories which expressed relationships within a normal family. e.g. To Card 1:

"Here are three little chicks having their breakfast and there is their Mummy looking after them."

These stories vary with the child's own feelings about his family but they show in some measure the child's realization of 'primary home experiences'.

(B) Those 'stories' which in fact are not really stories at all but are merely descriptive without expressing any movement or interaction between the animals represented. e.g. To Card 1:

"I can see a table and a bowl of porridge. Some chicks. A spoon. A hen."

This type of response from a 5- or 6-year-old points to immaturity of development.

(C) Stories in which there are movement, inter-relation and action but the story is in no way that of a 'family' relation. Two cards (Nos. 3 and 7) call forth this kind of response from many normal children: e.g. (Card 3):

"There is a lion sitting smoking his pipe and a little mouse is peeping out of his hole, but the old lion does not see him."

(D) Stories of family relations that are quite unrealistic in reference particularly to the kind of treatment meted out by parents to their children. e.g. To Card 1:

"The Mummy hen is very angry with the chicks because they have eaten all the porridge before she said 'Yes'. So she smacked them all hard and then threw them downstairs without feeling sorry."

These are rarely found in the records of normal children.

(E) Stories in which the main emphasis is on the loneliness and rejection of the child. These are also rare in the normal child's record.

TABLE 4. TEST RESULTS AT THE DIFFERENT AGE LEVELS: 5 AND 6 YEARS

	Breakdown $N=20$		Control $N=21$		Significance* level
	Mean	S.D.	Mean	S.D.	
C.A.	70·2	6·46	70·62	7·96	
C.A.T.					
Normal family (A)	2·3	2·03	3·714	2·33	0·05
Descriptive (B)	2·35	2·16	3·143	2·50	N.S.
Action stories (C)	1·5	1·28	2·381	1·28	0·05
Unrealistic parental treatment (D)	2·1	1·68	0·619	0·50	0·001
Loneliness and desertion (E)	1·75	1·33	0·619	0·50	0·001
Rorschach					
R: No. of responses	18·60	10·15	14·286	3·80	N.S.
M: Human beings seen in movement	1·4	1·27	0·726	0·889	N.S.
FM: Animals seen in movement	3·3	1·34	3·333	1·65	N.S.
m: Inanimate movement	1·05	1·22	0·809	0·68	N.S.
C: Colour	4·75	2·35	3·548	0·97	0·05
K: Shading	0·035	1·12	0·143	0·48	N.S.
c: Texture	1·125	1·21	1·333	0·66	N.S.
C': Blackness, Darkness	2·55	1·97	0·476	0·68	0·001
Autistic responses	2·35	1·60	0·429	0·60	0·001
Sinister responses	2·55	3·76	0·190	0·60	0·01
W.I.S.C.					
Verbal I.Q.	97·55	14·73	101·857	15·08	N.S.
Performance I.Q.	104·95	15·64	101·381	13·54	N.S.
Full Scale I.Q.	101·25	15·55	101·857	15·12	N.S.
Verbal – Performance I.Q.	−7·40	10·80	0·476	8·232	0·02

* Anything above the 0·05 level has been taken to be non-significant.

VOL. 2 1961

The 'normal' records were classified independently by three psychologists and the correlations between their classifications were 0·92, 0·90 and 0·93.

In the Rorschach test the number of responses which describe magical events in no way warranted by the perceptual qualities of the blot are described as 'Autistic' responses. The term 'sinister' responses is due to Alcock (1960) and is used to describe percepts which are culturally recognized as threatening, such as ogres, monsters, atom bombs etc. or those endowed by the child with other sinister qualities.

TEST RESULTS AT DIFFERENT AGE LEVELS

1. *5 and 6 year level*

From Table 4 it can be seen that in the C.A.T. the 5 and 6 year olds in the Breakdown group gave significantly fewer story responses in which normal family relations were described (A). They gave significantly more stories where the kinds of punishment meted out by parents to their children was completely unrealistic in its severity (D), and more stories where the main theme was the loneliness, rejection and desertion of the child (E). More of their stories also conveyed no sense of family (C).

Through this medium the young child who has broken down in a foster-home projects his confusion and uncertainty about his place in a family. He shows no concept of the dependability of parents or of the child's own safety in his world among grown-ups. He shows indeed a failure to have lived through what Winnicott and Britton (1947) so aptly described as "primary home experiences".

Rorschach. It is interesting, however, to see in the response to the Rorschach a different facet in the personality of these young children. Although as would be expected, there is significantly more expression of the sinister, more expression of blackness and darkness (C′) there is also significantly more use of colour and more recourse to escapist fantasy (Autistic responses). Through the medium of Rorschach the young child projects colour and magic into his world and so seeks to escape the uncertainties and insecurity of his reality. Despite expressions of the sinister and blackness, he demonstrates at this age his resilience, even though conditions are heavily weighted against him.

W.I.S.C. At this age-level on the W.I.S.C. the two groups differed in their Verbal-Performance I.Q. scores, the Breakdown group mean being −7·40 and the Control group 0·476 (compared with Wechsler's mean difference 0 points) giving a significance level of 0·02 on Student's *t*-test—this in spite of one a-typical result of a +28 Verbal-Performance I.Q. score of one boy in the group. The number of children in the two groups obtaining positive and negative Verbal-Performance I.Q. scores were also compared in a $2\times2\ \chi^2$ test. Those with V-P=0 were allocated for the purpose to the cell which would reduce their contribution to χ^2. The proportions showed a difference significant at the 0·001 level.

In his analysis of the difference between verbal and performance I.Q's on the W.I.S.C. in the American Standardization Sample, Seashore (1951) found that the distribution of the discrepancy scores for each age approximated a normal curve, so that the numbers of children in the Verbal I.Q. greater than Performance I.Q. and Performance I.Q. greater than Verbal I.Q. directions of difference were about equal.

TABLE 5. TEST RESULTS AT THE DIFFERENT AGE LEVELS: 7 AND 8 YEARS

	Breakdown $N=14$		Control $N=18$		Significance level
	Mean	S.D.	Mean	S.D.	
C.A.	93·786	37·1978	93·500	64·1470	
Rorschach					
R: No. of responses	21·357	10·7088	21·222	34·7712	N.S.
M: Human beings seen in movement	1·214	1·2582	1·889	2·4575	N.S.
FM: Animals seen in movement	4·071	6·3791	4·000	3·6471	N.S.
m: Inanimate movement	0·929	0·9235	0·833	1·2059	N.S.
C: Colour	1·107	1·6992	3·694	2·2394	0·001
K: Shading	0·286	0·3736	0·2778	0·2124	N.S.
Fc, c, cF: Texture	1·286	1·6044	1·333	1·8823	N.S.
C': Blackness and darkness	0·833	0·2820	0·222	0·1831	0·001
W.I.S.C.					
Verbal I.Q.	93·429	201·4945	110·440	122·7520	0·001
Performance I.Q.	105·071	243·1483	108·555	139·4379	N.S.
Full Scale I.Q.	98·857	203·9780	110·550	144·3791	0·02
Verbal—Performance I.Q.s	–11·643	200·2472	1·889	5·6340	0·001

VOL. 2 1961

2. *7 and 8 year level* (*Table* 5)

The C.A.T. was not used at this age level.

In the Rorschach results a gradual shift can be noticed. Although the Mean number of Colour responses given by the Control group (3·69) does not differ substantially from that of the group at the lower age-level (3·55) the Mean for the Breakdown group has dropped from 4·75 at the earlier age to 1·11.

The foster-home breakdown child seems now to be turning away from escape through fantasy and magic, and although there is still a significant difference between the Breakdown and Control groups in the extent to which the children use colour in formulating percepts, the difference is reversed.

There is still significantly more blackness and darkness in the foster-home breakdown child's concept of the world, and he is less able to use colour in formulating his concepts. It would seem that as he grows older he comes to face the reality of his world as a place in which it is not safe to allow too much feeling.

W.I.S.C. In the W.I.S.C. results for this age there is a difference between the two groups in verbal I.Q. significant at the 0·001 level, as well as the significant differences, also at the 0·001 level of Verbal-Performance I.Q. scores both in the *t*-test and in the χ^2 test. The difference in the mean verbal scores, although in keeping with the 9–11 age group, where it is significant at 0·02 level, is probably due to the high Control group mean (110).

3. *9 to 11 year old level (Table 6)*

In this age-group the Rorschach trend of the 7–8 year olds is even more strongly marked. The mean number of Colour responses in the Breakdown group has now dropped to 0·25, and although the Mean in the Control group has also dropped to 2·6 the difference between the Breakdown and Control groups is again significant at 0·001 level. Here can be seen the child who, in process of coming to terms with his circumstances, has hardened into a character reaction pattern and in doing so has become a limited and emotionally impoverished person.

TABLE 6. TEST RESULTS AT THE DIFFERENT AGE LEVELS: 9 TO 11 YEARS

	Breakdown group		Control group		Significance level
	Mean	S.D.	Mean	S.D.	
C.A.	125·25	7·69	122·286	8·52	
Rorschach					
R: No. of responses	24·60	10·27	29·2	15·07	N.S.
M: Human beings seen in movement	2·80	1·94	2·914	2·49	N.S.
FM: Animals seen in movement	5·05	2·56	5·143	2·93	N.S.
m: Inanimate movement	0·80	0·83	1·314	1·21	N.S.
C: Colour	0·25	0·38	2·614	1·69	0·001
K, k: Shading	0·60	0·88	0·543	0·80	N.S.
Fc, c, cF: Texture	1·40	1·39			N.S.
C′:Blackness and darkness	0·20	0·52	0·457	0·552	N.S.
W.I.S.C.					
Verbal I.Q.	93·90	8·30	103·229	15·481	0·02
Performance I.Q.	111·45	7·22	101·486	14·76	0·005
Full Scale I.Q.	102·45	7·00	102·400	15·95	N.S.
Verbal—Performance I.Q.'s	–17·55	8·88	2·200	2·71	0·001

W.I.S.C. As in the previous age group, Verbal-Performance I.Q. differences are significant at the 0·001 level in both t and χ^2 tests, and although the Control Group Mean is nearer the average (103) than in the 7–8 year group, the verbal score differences between the Control and Breakdown Groups is significant at the 0·02 level.

DISCUSSION

W.I.S.C.: Performance I.Q. greater than Verbal I.Q.

This characteristic 'pattern' has been recorded in various studies of deviant personality groups. A highly significant difference between delinquents and non-delinquents with higher Performance than Verbal score in the Wechsler-Bellevue Scale was found by Glueck and Glueck (1950) in their study of juvenile delinquents.

The age-groups among their 500 matched pairs are higher than those of the children in the present study, ranging from 11 years to 16 : 6 years. Nevertheless their findings are relevant to this study, particularly in the light of the changes in personality growth as evidenced in the Rorschach.

Glueck and Glueck say of the delinquents: "They have less verbal intelligence, scoring lower than the Control Group on the Vocabulary, Information, Comprehension and Digit Symbol Sub-tests of the Wechsler-Bellevue Scale. On the other hand, they obtained a higher score on two out of five of the performance sub-tests. The delinquents tend to express themselves intellectually in a direct, immediate and concrete manner rather than through the use of intermediate symbols and abstractions." Glueck and Glueck also remark that the tendency towards direct and concrete ways of mental expression fits into the general picture of the delinquents as more simply organized than the non-delinquents. This they suggest may be related to the lower incidence of neuroticism.

This pattern has also been noted by Wechsler (1958) in the test performance of adolescent psychopaths.

VOL. 2 1961

The present writer (1955) first noted the same characteristic in a study of the hard core of children who did not respond to treatment in a hostel for maladjusted children. In this group the distribution of the differences between Verbal and Performance I.Q's was by no means normal, but was skewed in the Performance higher than Verbal direction.

By matching the individuals in this 'resistant' group with Controls and using the 'related *t*-test', a difference significant at the 0·001 level between the V-P I.Q. Scores of the two groups was found.

An examination of the early histories of the children in this 1955 study showed that they had all suffered early deprivation due to such factors as mental breakdowns of mother during the period of the child's early infancy, or severe stresses and tensions between parents, causing emotional rejection of the child. Since then a number of workers have remarked on this same characteristic. More recently Pringle and Bossio (1958) found that deprived children were markedly backward in language development. This conclusion was supported by the fact that on the W.I.S.C. all the age groups studied (i.e. children of 8, 11 and 14 years) obtained significantly higher scores on the Performance than on the Verbal Scale.

Russell Davis (1959) includes in his study of "critical learning periods" the development of the use of language and verbal communication. He suggests that the critical period for the foundation of speech and verbal usage is between 6 months and 3 years. He also stresses that "the critical learning period hypothesis encourages us to look for the cause of failure not so much in physical defects but in the child's circumstances".

Dorothy Burlingham and Anna Freud (1943) who observed children in a wartime nursery pointed out that the achievement of speech during the first two years of life was one of the aspects of development that suffered when the emotional tie to the mother was broken.

The highly significant difference in the present study between verbal and performance ability in these grossly deprived children is striking and suggests the possibility of damage to development at very early levels.

Changing patterns in the Rorschach Differences

An examination of the changing pattern of response to the Rorschach through the three age-groups of foster-home breakdown children shows a movement from the uninhibited, spontaneous, resilient young child to a gradual hardening and limiting of personality as a mode of defence against the stresses and hurts of his experience.

This is well illustrated by the Rorschach records of one of the children, who was given this test first at the age of 5 : 2 years, following a breakdown in fostering. Subsequent records were taken at the ages of 7 and 9 : 3 years. At 5 : 2 years this boy drew on magic and fantasy in 5 out of the total 22 responses given. Typical examples of these responses are: Card VII "Two little bunnies in a field playing together. They're not lonely. They say a magic and their Mummy always comes and feeds them", and Card IX: "There's a candle in a pink field. It's a magic candle. It always stays alight so it's never dark there." His only Human Movement (M) response was also concerned with magic. It was (Card II) "a funny man doing funny tricks. He knows a magic and when he says the word he can get whatever he wants." At this age there was a free use of colour. The Sum of Colour responses was 4·5, and no Sinister responses were given.

By the time this child was 7 years there was a marked change. The Sum of Colour responses had dropped to 0·5. The number of responses based only on Form was higher. The total number of responses was 20, and there was no reference to magic. This progressive hardening and limiting of personality is seen even more clearly in the record taken at 9 : 3 years. Here there were no Human Movement responses and the response to colour was tentative and additional. Cards IV and VII were refused completely, and 5 of the 20 responses were angry faces with biting teeth.

Colour responses in the Rorschach are traditionally held to be indicative of the subject's capacity to relate himself to the realities of his environment; and the extent to which these responses are integrated into the actuality of the form of the blot is regarded as an indication of the stability of emotional adjustment.

Responses involving the use of colour occur in the records of quite young children and continue throughout childhood. Young children respond to the colour on a card without much concern for the form or shape of the coloured part used. A typical Colour (C) response from a 3-year-old child to the Red on Card II, for example, might be "Red Paint". An older child of 5 years might respond to the same area: "Those are cherries because they are red". Here the Colour and Form are loosely related, but the child is responding mainly to the colour, and the shape of the blot is quite secondary. This is a Colour Form response (CF). In the response of an older and more mature child the reality of the shape is not lost sight of, despite the impact of the colour. A 10-year-old gave this response to the same area: "That looks like a pair of socks. Could be Hornsey red socks (Hornsey football club)." Here the response is Form-controlled—a Form Colour (FC) response. Throughout childhood response to colour in the Rorschach cards is usual, but the balance of emphasis shifts from C to CF and finally to FC responses.

In their longitudinal study of Child Rorschach responses, Ames *et al.* (1952) related the changing character of responses through childhood to known developmental norms. They saw in the changes in Colour responses evidence of "a gradual

increase in the reaction to external stimuli as the child becomes older and as he learns to give wider use and fuller play to his emotional reactions".

In the Rorschach records of the children in this study, the one differentiating characteristic between the Breakdown and Control groups throughout all the ages is in their use of colour as a determinant.

In the youngest age-group there is significantly greater response to colour stimuli in the Breakdowns than in the Controls. Despite all their previous experiences, it would appear that these children were still trying to reach out and adapt to their environment, though the excess of CF and C responses in their records indicates that their attempts to relate to their environment are often impulsive, egocentric and uncontrolled.

Gradually through 7–11 years the children responded to the colour less and less, though it was clear from their spontaneous remarks that they were aware of it. Many of the Breakdown group of 9–11 years gave no Colour responses at all.

It is in the 5 and 6, and the 7 and 8 year groups that the foster-home breakdown children show a significantly greater responsiveness to the shading and blackness of the blots. Knowing the early histories of these children, it is not surprising to find that they give expression to feelings of dejection, and show increased sensitivity to the qualities of the blots that suggest blackness, darkness and threatening figures.

VOL. 2 1961

Children's Apperception Test

In many ways, the responses of the 5 and 6 year group to the C.A.T. present another facet of the personality development of the foster-home breakdown children. Here we see more vividly presented, the immediate effects of their deprivation. Most striking in these children's stories was the emphasis (1) on severe punishments of children by their parents (2) on loneliness and rejection or desertion of children by their parents and (3) on the confusion in the child's mind regarding normal family relationships.

Stories such as the following were so frequent as to be almost commonplace:

Card 9. "A baby rabbit sleeps in a nice cot. She's sitting up to see what's happening. A Golliwog is coming to bash her up and kill her and eat her. She calls Mummy and Daddy but they don't come and save her. They've gone and left her."

Card 10. "Mummy bear put him over her knee and smacked his bottom. He was naughty and messed up the toilet after Mummy had polished it so she got a knife and sticked it in his eyes."

Card 11. "There are some baby chicks and they think that is their mummy. She's a cuckoo. You know what cuckoos do. Don't you? They throw all the babies out of the nest."

In a comparable study of emotional attitudes towards the family of normal, delinquent and neurotic children, Lydia Jackson (1950) used her own picture series, *Test of Family Attitudes*. She found that neurotic children tended to believe that parents reject and maltreat their children more often than they like and protect them and that children react to such treatment wth hostility and rejection of their parents. The delinquent subjects tended to believe even more strongly than the neurotics that children are 'bad' and that parents are always ready to deal out severe punishment. She found that while they were conscious of parental rejection they could not easily

recognize or accept that children also have hostile feelings towards parents; and that fantasies of being 'shut out', isolated or sent away, are more common than among the neurotics. "Delinquents appear to be more detached, less deeply involved in the family loves and hatreds than are neurotics." She suggested that this might be due to the actual feeling of 'not belonging', as well as to a more thorough repression of both hostile and positive emotions. Her study is not entirely comparable with the present one because it was concerned with children within their own families. But many of the characteristics emerging in the stories of the delinquent subjects are disconcertingly reminiscent of the C.A.T. stories of the 5 and 6 year-old foster-home breakdown children.

Bene-Anthony Test

This picture of the damage in personality growth already suffered by the 5 and 6 year-olds was emphasized by the 12 children from the 5 and 6 and the 7 and 8 year Groups who did the Bene-Anthony (1957) Family Relations Test. Amongst these few children a very clear pattern emerged. They all showed a gross lack of self-regard. They either posted no cards to "Self", or posted to themselves such statements as "N. . . . thinks you are bad" or "N. . . . thinks you are nasty" (N. being the child's own name). They also denied the young child's normal dependency feelings, so that cards on which there were questions as to whom the child would need when ill or hurt or tired were invariably posted to Mr. Nobody, often with the comment: "Children have to learn to look after themselves" or "Children mustn't be babies". All showed a massive repression of aggressive feelings, whether of aggression towards themselves by other people, or of their own feelings of aggression to others. Such feelings were denied by the child unhesitatingly posting the cards to Mr. Nobody.

CONCLUSIONS

While too much weight cannot be placed on single aspects of test results, the picture that emerges from the combined results of the V-P relationship in the W.I.S.C., the characteristic emphasis on D and E stories in the C.A.T., together with the Rorschach pattern that appears with marked frequency in the 5 and 6 year records, is of children who have already suffered such damage to early personality growth as to be regarded as emotionally handicapped. The proper care of such children demands as much skill as does that of a physically handicapped child, the important difference being that the emotionally handicapped child is not so easily recognized, nor are his problems so readily understood.

Through the 7 and 8 years group there gradually emerges a test pattern which becomes even clearer in the 9–11 year group. A W.I.S.C. result which has Performance I.Q. significantly greater than Verbal I.Q., combined with a Rorschach record that is limited and constricted, particularly in response to colour, would seem to point to severe arrest or impairment of personality development.

Although the results quoted in this study are group means, individual cases confirm the pattern with striking consistency. The children showed by their comments that they were clearly aware of the colour in the Rorschach, yet they almost completely failed to incorporate colour into a scorable response. Even if there are doubts

about the importance of colour per se, it is reasonable to suppose that an important factor in bringing about a Form-Colour response is the child's ability to utilize all the elements in the visual-stimulus situation: and, in a pure Colour or Colour-Form response, his capacity for switching his mode of response from Form to Colour. Such a limitation in the capacity to use colour as was shown points to a failure in normal growth in adaptability to changing external stimuli and in the capacity for organization of thought.

Although this study was concerned with small numbers of children, the characteristic test patterns, so significantly different from those of the children who constituted 'controls', recurred so consistently that it would seem wise to regard them as 'danger signals' when found in cases suggested for fostering.

SUMMARY

A comparative study was made of two groups of children placed during a 5-year period in a Reception Centre. One group was of children who had been in Care and separated from their own families from an early age. These children were examined following a breakdown in fostering. The other group had been placed temporarily in Care owing to an emergency in their own families. Significant differences in test results between the two groups were observed at three different ages. The characteristic test patterning of the grossly deprived children (foster home breakdowns) was thought to indicate damage in personality growth of sufficient seriousness to create doubts whether they could be successfully re-fostered in ordinary homes. If this is so, such patterning should be given weight in reaching a judgement as to whether a child should be fostered or would be more appropriately cared for in a Children's Home.

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VOL. 2 1961

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FOUR TO SIX: CONSTRUCTIVENESS AND CONFLICT IN MEETING DOLL PLAY PROBLEMS

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VOL. 2 1961

IN STUDYING the growth of personality in childhood, one feels the need to supplement records of overt behaviour by some technique that will enable us to glimpse the child's view of the people and things and events that make up his life. Doll play has been found a very suitable medium for this purpose. Sears (1947) describes vividly how, after a period of investigation, the child's fantasy typically takes over, transforming his play and giving purpose and significance to the actions he carries out through the dolls.

Being interested in certain areas of daily life which tend to produce difficulties or conflicts for children and their parents, we have found it possible through doll play to gain insight into the feelings and fantasies that underlie behaviour in these areas. This is done by presenting the doll family in a standard series of scenes and asking the child to indicate, either in speech or in action as he prefers, what will happen next. Having the choice of verbal or manipulative response is a definite advantage for young children, in whom one or other type of expression may be inhibited, but seldom both.

Children's play varies widely in the degree to which it observes, or oversteps, the bounds of realism; this is one of many aspects of play style which invite a study of individual differences. But realistic action is by no means essential to the expression of real feeling in relation to the characters and events portrayed; and it is about feelings and fantasies, rather than about the realities of the child's domestic life, that we can hope to learn from this technique.

Structured, in contrast to unstructured, doll play has been used by comparatively few investigators, and generally for limited topics. Lynn's S.D.P. test (1959), published when our work was already at the writing-up stage, is the only attempt we can discover to test reactions to most of the common situations of a child's daily life through this medium, which it does chiefly in terms of parent preference, maturity and dependence.

Our aim in devising the London Doll Play Technique was not to create a test for the measurement of predetermined characteristics, but to forge a tool for exploratory research into various aspects of young children's fantasy life, in connection with a longitudinal study of child development. We wished to find out what we could about how 4-year-olds (and later 6-year-olds) in general thought and felt about the events and people around them; to look for characteristic differences in

* The Child Study Centre is one of a number of similar Centres in various countries conducting longitudinal studies, which are co-operating through the good offices of the Centre International de l'Enfance, Paris (Falkner, 1960).

the fantasies of boys and girls, and of children with and without older and younger siblings; to discover what elements would tend to remain constant from 4 to 6, and what would tend to change; and to gain insight into the relationships between play and real life behaviour. We found we were getting, in addition, striking differences between individual children in their response to the problems we presented with the dolls: ability to cope, intellectually and emotionally; degree and kind of affective involvement; freedom of expression through speech and/or play; attitudes toward, and roles allotted to, the various doll characters; signs of dependence and independence; degree of socialization; concepts of transgression and readiness of recourse to punishment; constructiveness of the solutions offered, and manner of reacting when a solution was not found—all varied from child to child in ways that seemed to afford valuable clues to personality structure. The protocols, indeed, heaped upon us an embarrassment of riches and presented a challenging problem of analysis. Some years had to be spent in trying out systems of classifying responses so as to take account of as many as possible of the variables that seemed crucial.

The technique is reported here as a record of experimental work. It has been made available, on request, to psychologists engaged on similar researches in several other countries, so that cross-cultural comparisons may eventually be possible. It also seems likely to prove clinically useful (for a sample record see Moore and Ucko, 1960), and the authors will be glad to supply instructions for administration to any qualified psychologist or psychiatrist who may be interested. It is not, however, put forward as a finished test, since at present it possesses neither a definitive scoring system nor the proofs of reliability and validity that test status should entail.

THE EXPERIMENTAL SETTING

The Child Study Centre Longitudinal Research (Moore, Hindley and Falkner 1954; Moore 1959) is a developmental study, comprehensive in scope, of a fairly

TABLE 1. THE SAMPLE

Father's occupational category			Sibship status	At 4 years		At 6 years	
Registrar General's Class	Boys	Girls		Boys	Girls	Boys	Girls
I	2	1	Only	13	10	10	8
II	9	9	Eldest	10	12	13	14
III	35	42	Middle	7	14	11	15
IV	5	5	Youngest	24	25	20	24
V	3	4		–	–	–	–
Totals	54	61		54	61	54	61

I.Q. (Terman-Merrill) at 5 years

	Boys	Girls
Mean	115·5	113·4
Standard deviation	16·225	13·956

representative group of children recruited before birth from a district of central London. To ensure that both the sample and the procedure were the same at both ages, we have restricted our present analysis to 115 cases (54 boys and 61 girls) who completed the same form of the test at both 4 and 6 years. Table 1 gives the composition of this sample by occupational class, sibship status, and I.Q.

Children were tested within one month of their birthday, with rare exceptions who were seen up to 3 months late. Three testers were involved: D and U (both women) at 4, U and M (a man) at 6. We plan, in due course, to look into, and report on, any differences in the responses obtained by different testers.

At 4 years, to establish rapport, the child was taken through a few easy performance tests, with the mother present, before taking him into an adjoining room for doll play. This preliminary was unnecessary at 6, but at both ages initial adjustment, social confidence, and emotional dependence on mother were among some 25 variables rated on 5-point scales immediately after the session.

In general, the wording and presentation of the items followed the instructions exactly, since it had been found that even slight modifications could alter the situation for the child to an unknown extent. Where the response to an item was not clear, however, the Examiner asked any questions necessary to establish the child's intention. Questions were not generally put more than three times at most; often twice was enough to make clear that the child intended to ignore or evade the situation.

VOL. 2 1961

The child's response to each item was briefly written, as it was given, on a form that provided for both verbal and action responses, with coded indications of any obvious affect. Incidental conversation was included if it related to the situation or to the child's own life or family. Tangential play, in which the child departed from the situation proposed, was permitted up to a point and recorded where it occurred, the Examiner seeking a suitable opportunity to present the next item. Requests for mother and requests to change to a different occupation were also noted.

The standard procedure included, in addition to the problems and associated items dealt with in this paper, a number of questions designed to throw light on attitudes and concepts, especially those concerned with the roles of various members of the family. A further communication dealing with these is in course of preparation.

CLASSIFICATION OF RESPONSES TO PROBLEMS

After much experimentation, a system of classifying responses to problem items was agreed upon by both authors, who then scored the records independently and finally ironed out points of disagreement in discussion. The categories adopted were *constructive*, *punitive*, *aggressive*, *passive*, and *null*. These terms, defined with their subdivisions below, like all descriptive labels, are somewhat arbitrary; they are the best we could find to convey the distinctive characteristics of the main groups into which responses could most reasonably be divided. We are aware that their meanings are not mutually exclusive; and indeed, though we did assign each response to one or other group according to its main quality, we were obliged sometimes to give additional punitive or aggressive scores to responses falling into other categories. We also introduced a category of *anxiety* which could be used to qualify any response in addition to its main score.

The categories are defined as follows*:

(1) '*Constructive responses*' are those which remove the problematic element in the situation without detriment to any of the characters. They include:

* The following abbreviations are used:

S=Subject
E=Experimenter
M=Mother doll
F=Father doll
C_1C_2=Child dolls (of equivocal sex)
C_{ident}=the child doll with which S appears to identify himself.
B=Baby doll

(a) *Solutions*, in which the situation is accepted as presented by the Examiner, and the action carried on (or indicated verbally) from the point at which E leaves off, to a realistic and satisfactory outcome;

(b) *Modifications*, in which the problem is removed by altering the situation proposed by E. This differs from a refusal in that the Subject accepts the fact that there is a problem and is concerned to deal with it, but does so by exercising his prerogative to manipulate the play situation at will. Modifications may be realistic: e.g. the night scene is converted to day; playfully non-realistic: e.g. the spilling of food is changed from an accident to a game by making everyone spill; or altogether fantastic: e.g. a child escapes from danger by flying into the air.

(2) '*Punitive responses*' are those in which punishment or reproach is introduced, either as the *main* or as an *additional* element in the response. Although punishment may be regarded as constructive in some circumstances, opinions on this point are often at variance and we have found it simplest to classify it separately without prejudice. A response such as: the child who spilt his food is told off but gets some more, would be scored constructive with additional punishment.

(3) '*Aggressive responses*' are those in which aggression is a marked feature of the response, whether it is shown *overtly* in S's handling of the dolls, or *thematically* in the content of the play, or both. A *main* aggressive score is one that precludes a constructive outcome, but aggression can be scored *additionally* to any type of response; e.g. where a child is repeatedly aggressive in the naughtiness scene, but is finally reconciled with his family, the response is scored as a solution with additional aggression. If punishment is carried to violent lengths, we have scored it aggressive rather than punitive.

(4) '*Passive responses*' are those in which the problem is recognized but neither constructive action, nor punishment, nor aggression is introduced. Typically no conclusive action is taken; crying and running away are also scored passive with additional anxiety, except where they occur as a result of punishment.

In all the above categories, S accepts the play situation and responds at play level (even though he may introduce his own person into the play instead of acting through the dolls, as when the reply to the question "Who will share food?" is "I will").

(5) '*Null responses*' are those in which S is either unable or unwilling to respond to the problem in play (or equivalent speech). They include:

(a) *Refusals*—explicit and outright rejection of the situation: "They don't do that" or the equivalent in action, e.g. pulling away the string in the tug-of-war;

(b) *Ignoring* E's question (after repetition);

(c) *Zero responses*—those that give no basis for scoring; generally "I don't know" or an irrelevant answer.

(6) '*Anxiety*' (interpreted broadly to include unhappiness, discomfort and embarrassment) is a characteristic which may accompany any type of response, but which has not been found to constitute a main category in itself. We have scored it *additionally* in the four following manifestations:

(a) *Thematic*—The introduction into the play of themes of fear, unhappiness or escape;

(b) *Overt* signs of such feelings in S;

(c) *Requests to see mother*, or anxious reference to her, e.g. "Will Mummy go home without me?"

(d) *Requests to stop playing* with the dolls, or to do something else. The occasional child in whom these are due to simple lack of interest or dislike of the material, rather than to anxiety as defined, is easily detected. In other cases, observation suggests that such requests, like those in (c) above, tend to occur as reactions to problems that touch on areas of conflict.

(7) '*Omission*' of items occurred in a few cases inadvertently, or where a child's reply could not be heard or understood.

THE PROBLEMS: PROCEDURE AND RESULTS

We shall present, first, a brief description of the several problems in turn, with an analysis of the responses to each by age and sex. A few non-problem items will be included where they are relevant. Next, we shall consider trends that emerge

when these separate analyses are brought together, and shall discuss some of the implications for an understanding of children's fantasy and affective life. Consideration of individual patterns of response, and consistency from 4 to 6, will be deferred to a future paper.

TABLE 2. MEALTIME

	4 years		6 years	
(a) Missing seat	Boys	Girls	Boys	Girls
Constructive responses:	40	52	39	52
Solutions:				
All find separate places	25	20	14	19
Sharing	10	25	21	26
Modifications:				
M is cooking, B asleep, etc.	5	7	4	7
Aggressive responses: additional only	4	0	1	1
Anxious responses: additional only	7	1	1	0
Passive responses:	6	7	10	3
Null responses:	8	2	5	6
	54	61	54	61
(b) Missing food				
Constructive responses:	32	49	52	61
Solutions:				
Spontaneous sharing implied in (a)	10	25	21	26
Sharing accepted on suggestion	18	17	26	29
Modifications:				
One has eaten or will eat later, B has bottle, etc.	4	7	5	6
Aggressive responses: additional only	1	1	0	0
Anxious responses: additional only	2	0	2	0
Passive responses:	7	5	1	0
Null responses:	8	6	1	0
Omissions: (including refusal of whole situation)	7	1	0	0
	54	61	54	61

VOL. 2 1961

In the tables that follow, the totalled columns show the number of responses receiving main scores in each category. The untotalled columns show (a) the content of constructive responses, (b) the sum of main plus additional scores in punitive and aggressive categories, (c) anxiety scores, which are always additional.

1. *Readiness to share* (*Mealtime*)

Our first problem is presented in two parts. There are 5 members of the family, but (a) only 4 chairs and (b) only 4 plates on the dinner table. The intention was to discover what proportion of children would appear concerned that all members of the family should be provided for; how they would contrive this, and in particular how readily they would suggest, or alternatively accept, the idea of sharing. Accordingly, if S does not solve the problem by sharing a seat (which we take to imply sharing food also), we test his receptiveness to the idea by asking who will give some food to the one without. Thus the solution to the second part may be either implied in the first or else elicited by this suggestion. But an equally constructive attitude can be shown, here as elsewhere, in bypassing either or both parts of the problem with the aid of imagination, as illustrated in the examples of modifications given in Table 2.

At both ages, we found a substantial majority of children concerned to solve the problem by one means or another. At 4, many more girls than boys spontaneously suggested sharing. Boys gave more null responses, and showed more signs of conflict (anxiety and aggression) even at times when they had found a solution. At 6, sharing was the commonest solution in boys as well as girls, and resistance to the direct suggestion (null responses to (b)) had virtually disappeared, together with overt affect. It is interesting that even this first quite simple problem reveals the younger boys' comparative reluctance, or inability, to cope with problems, which we shall find more strongly marked in most of the later scenes.

2. *Reaction to mess* (*Food spilt*)

At the end of the meal, C_{ident} is made to sweep his bowl, as if by accident, from the table, and S is asked what will happen. We wished to see how many children would treat this as a punishable offence, and how many as an accident to be remedied. (Table 3.)

Here we found many more girls than boys at 4 concerned to restore order, while relatively more boys thought of the child's need. At 6, the first difference was smaller, and the second reversed. Boys produced more affect than girls at both ages, and more null responses at 6, but both sexes showed more anxiety at the earlier age—when, indeed, requests to play at something different were more frequent at this point than at any other. Punishment was introduced, however, by only one-seventh of the younger and one-fifth of the older children. Those who converted the 'accident' into a game by making one doll after another drop its plate, without becoming aggressive, appeared to be dispelling any possible blame, and at the same time avoiding emotional involvement in the situation, just as children gifted with humour often escape unpleasantness in reality by making their parents laugh.

TABLE 3. FOOD SPILT

	4 years		6 years	
	Boys	Girls	Boys	Girls
Constructive responses:	24	42	30	43
Solutions:				
Order restored: dish replaced, floor cleaned	9	32	20	29
More food, or child comforted	8	4	4	8
Modifications:				
Spilling made a game	7	6	6	6
Punitive responses: main	8	5	8	9
main and additional	8	8	9	13
Aggressive responses: main	4	1	4	0
main and additional	6	3	6	2
Anxious Responses: additional	13	9	5	2
Passive responses:	4	2	2	7
Null responses:	9	8	9	2
Omissions	5	3	1	0
	54	61	54	61

TABLE 4. TUG OF WAR

	4 years		6 years	
	Boys	Girls	Boys	Girls
Constructive responses:	34	44	47	54
Solutions:				
Parent helped: winner	17	20	20	22
loser	6	5	17	23
Modifications:				
Both parents helped	3	10	7	8
Child in centre	7	8	3	1
Children watch the game	1	1	0	0
Aggressive responses: main	1	0	0	0
main and additional	4	0	0	0
Anxious responses: additional	6	6	4	1
Passive responses:	4	5	2	4
Null Responses:	14	11	5	3
Omissions	1	1	0	0
	54	61	54	61

VOL. 2 1961

3. *Choice between parents (Tug-of-war)*

In the next scene the parent dolls, after an introductory game of football, are made to have a tug-of-war, and S is asked, first who will win, and then which parent C*ident* will help to pull the rope. (We are happy to acknowledge the origin of this idea in Bellak's CAT (1950).) Although designed as one of a series of simple choice questions concerned with parent preference (to be discussed in the paper on personal roles), this item has been included among the problems since it was found to entail an element of conflict for a substantial number of children. While comparatively few

TABLE 5. CHILDREN'S FIGHT

	4 years		6 years	
	Boys	Girls	Boys	Girls
(a) What will happen?				
Constructive responses:	19	29	19	25
Solutions:				
Fight stopped by S	1	7	3	5
Fight stopped by parent	11	2	8	10
Loser saved	2	7	3	3
Loser retaliates	3	8	3	3
Modifications: Loser unhurt	2	5	2	4
Punitive responses: main	5	8	8	8
main and additional	5	8	11	9
Aggressive responses: main	4	2	2	4
main and additional	5	5	3	5
Anxious responses: additional	2	0	4	2
Initial passive and Null responses: (analysed below)	26	22	25	24
(b) What will F do?				
Constructive responses:				
Fight stopped	5	3	8	3
Punitive responses: main	2	8	15	18
main and additional	7	13	20	22
Aggressive responses: additional only	8	1	7	2
Anxious responses: additional only	10	8	0	2
Final passive responses:	5	1	0	1
Final Null responses:	14	10	2	2
	54	61	54	61

seemed disturbed by the tug-of-war as such, the suggestion that C should help one parent against the other, produced, at 4, many modifications avoiding the choice between parents by compromise or placing the child in the centre, and many null responses, sometimes with evident anxiety. (Table 4.)

By 6 there is a marked change: instead of refusing or resorting to compromise, many of the children are now ready to help the parent they had just declared to be losing the contest: interesting evidence of the development of a sense of fairplay. In this growing acceptance of the idea of the competitive game, shown also in the decline of anxiety, we can see how the aggression implicit in the tug-of-war between parents, which must seem dangerous to many children at 4, becomes sublimated and de-emotionalized in the latency period.

4. *Direct aggression (Children's fight)*

We attempted a test of the limits to permissible aggression by causing the two child dolls to fight, and having got S to say which would win, making the winner knock the other C down and pound it, saying "Look, she's hurting him" (or "He's hurting her")—"what will happen?" If the fight is continued without parental intervention, we then check on the concept of authority by asking "What will Father do?" The fight was not in the original version, but was introduced for our present sample when it was found that no child in a preliminary group had made personal aggression the "naughty deed" in Problem 6. The effect was to open the doors to aggressive fantasy, which spread to later scenes in a number of children at both ages who up to this point in the test had played in a controlled and decorous way.

VOL. 2 1961

However, aggression is by no means the commonest reaction (Table 5). About one-third of our subjects spontaneously separated the combatants, either with their own hands or by calling in a parent figure, including those who punished both C's. The number who made the loser retaliate was surprisingly small, and hardly any produced a light-hearted outcome.

Over two-fifths of the children at both ages gave passive or null responses to the first question. When asked what Father would do, such children introduced punishment in numbers exceeding those who had done so spontaneously; this was by far the commonest response, especially at 6, revealing the picture of the punitive parent in the minds of those children who were unable to deal with aggression in their own way. Moreover, aggressive responses to this second question were also more numerous than spontaneous ones in boys at both ages, but not in girls. By contrast, anxious reactions to the introduction of the father, in common with continued failure to respond (final null responses), seem more a function of age, being common at 4 and almost vanishing at 6. Fighting, as presented here, must seem a serious matter to most of these children, but less so as they grow older. It would be interesting to compare responses from a society in which aggressive behaviour is less deprecated than in Britain.

5. *Displacement by siblings (Child alone and Baby fed)*

The next scene is designed to explore attitudes to babies in children with and without younger siblings, and to bring out any feelings of displacement that may exist.

We arrange for M to play with B, and for F to take $C_{non\text{-}ident}$ out, and ask S what C_{ident} will do now that he is left on his own. Next we suggest that M shall feed B, asking S again what C_{ident} will do when he sees her do this. Finally S is asked if he would like to make M bath B. The first two questions constitute a two-part problem; the bathing is not a problem but has been found to contribute usefully to the affective picture obtained. (Table 6.)

TABLE 6. BABY

	(a) Child alone				(b) Baby fed			
	4 years		6 years		4 years		6 years	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Constructive responses:	36	50	47	56	15	27	28	42
Solutions:								
Self-sufficient (plays)	8	8	29	31	1	3	2	3
Goes after F and C	9	17	7	2	0	0	2	2
Joins M and B	7	17	5	9	3	8	8	14
Is fed	1	1	2	0	3	7	7	13
Waits (sits down, etc.)	7	5	1	8	3	2	2	1
Modifications:								
Family reunited	1	0	1	1	4	2	2	5
Supplants M	0	0	1	2	1	2	0	2
Supplants B	2	0	0	2	0	1	3	1
Fantastic play	1	2	1	1	0	2	2	1
Punitive responses: main	0	0	1	1	0	2	1	0
main and additional	0	0	2	1	0	2	1	2
Aggressive responses: main	3	1	4	3	2	1	10	5
main and additional	4	1	6	5	4	4	14	5
Anxious responses: additional	4	6	2	4	8	1	3	1
Passive responses:	5	5	1	0	1	3	1	2
Null responses:	11	5	1	1	24	10	12	5
Solution implied in previous response	—	—	—	—	12	18	2	7
	54	61	54	61	54	61	54	61

While M merely played with B, C was made to join her by one-fifth of the 4-year-olds, and to follow F by a similar number, but one-eighth preferred to make C play independently, and one-tenth to let him sit down and await his turn. At 6 the proportion of independent play had risen to over one-half, and joining a parent had declined accordingly, while patient waiting was almost non-existent in boys.

When M fed B, those C's who had not already joined her tended to do so, often

getting fed themselves, so that independent and waiting responses almost disappeared at both ages. At this point, however, a few of the more original-minded subjects modified the situation, sometimes by reuniting the family for a meal or other joint activity. Girls exceeded boys throughout in making C join M, often participating actively in B's routine. Null responses were, as usual, commoner in boys at both ages, but showed a high peak in boys of 4 who also revealed a considerable amount of anxiety. At 6, this picture had completely changed, anxiety and null responses dwindling by half, while aggression more than doubled.

TABLE 7. POINT OF FIRST APPEARANCE OF AFFECT IN THE 'BABY' SCENE, AND COMPARISON OF AFFECT IN SUBJECTS WITH AND WITHOUT YOUNGER SIBLINGS AT AGE OF TESTING

First sign of affect when Baby was —	Aggression				Other affect			
	4 years		6 years		4 years		6 years	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
played with	4	1	6	5	16	10	5	7
fed	2	4	13	4	7	3	4	2
bathed	9	2	0	0	5	3	0	1
Totals and percentage of sample	15 (28%)	7 (11%)	19 (35%)	9 (15%)	28 (52%)	16 (26%)	9 (17%)	10 (16%)
Subjects with younger sibs*	6 (35%)	1 (4%)	8 (33%)	4 (14%)	8 (47%)	2 (8%)	5 (21%)	5 (17%)
Subjects without younger sibs*	9 (24%)	6 (17%)	11 (37%)	5 (16%)	20 (54%)	14 (40%)	4 (13%)	5 (16%)

* Percentages based on number of such subjects in the sample at age of testing: e.g. 6 is 35 per per cent of the 17 boys who had younger siblings at 4 years.

To appreciate the affect aroused, we need to view the sequence of three items. Table 7 shows the point at which affect was first displayed in this scene. For this purpose aggression is treated separately, while 'other affect' is a broad category including, besides overt and thematic anxiety, punishment, null responses, and modifications in which C_{ident} supplants the baby.

It is notable how this 'other affect', tending to avoidance of the problem, appeared in the early part of the scene at 4, while aggression tended to appear later, especially in boys. This often culminated in the bath scene, which at times became a fantastic orgy with the whole family piled in the bath, drowned, or squashed beneath upturned furniture.

At 6 aggression appeared earlier in the sequence—typically in boys when B was

fed, and often directed against M rather than B. There was much less other affect, and of those children who did show it, 58 per cent were also aggressive, as compared with 16 per cent at 4 (not shown in Table 7). It seems that the tendency to avoidance at 4 has given way to freer aggressive play at 6, but that some children feel anxious about expressing their aggression.

The last two rows of the table reveal that this scene arouses feelings as frequently in children who have no younger siblings as in those who have; indeed, 4-year-old girls with baby siblings showed *less* aggression, and significantly less other affect ($P < 0{\cdot}02$), than those without.

Why should children who have never been displaced by a sibling show conflict in this situation? Pending fuller discussion in our next paper, we would suggest that one among several reasons may be that for such children, B represents the infantile side of themselves which they are encouraged, and endeavouring, to outgrow. In girls, the conflict may be mitigated by identification with the mother, promoting their maternal interest in babies and enjoyment of domestic routines, and this would be fostered by the presence of a real baby in the house. For boys the conflict between regression and independence might be sharper, and their aggression a protest directed against the mother as the occasion of their distress.

TABLE 8. CONCEPTS OF TRANSGRESSION

		4 years		6 years	
		Boys	Girls	Boys	Girls
Aggression to people:		16	23	20	31
(fighting, smacking, hurting, spitting at others)	by C_1 or C_2	8	16	17	21
	by B	0	2	2	5
	by F or M	8	5	1	5
Aggression to things:		9	7	14	13
(smashing things, upsetting furniture or dishes)	by C_1 or C_2	8	3	11	9
	by B	0	1	1	3
	by F or M	1	3	2	1
Other transgressions:		11	18	16	17
(disobedience, stealing, swearing, running away, crying, spilling, minor mischief)	by C_1 or C_2	7	14	8	13
	by B	4	2	3	2
	by F or M	0	2	5	2
Null responses:		18	13	4	0
S becomes aggressive		4	0	0	0
Refusals		5	3	2	0
No deed, zero, ignoring		9	10	2	0
		54	61	54	61

6. *Transgression and its outcome* (*Naughtiness*)

S is next invited to decide which of the dolls shall be naughty, and what is "the naughtiest thing he could do". Depending on the response, further questions are asked to elicit consequences, the culprit's subsequent behaviour, and whether he is "mostly good or mostly bad". We shall discuss, first the concepts of transgression as shown in the choice of naughty deed; second, as the problem element, the final outcome; and lastly, the distinction between deed and doer indicated by the answers to the last question.

(a) *The naughty deed* (Table 8). At 4, one-third of the boys and one-fifth of the girls failed to specify a misdeed, some of them being unable to select a culprit. (One boy considered and dismissed each doll in turn, saying "But he *couldn't* be naughty. None of them could be naughty.") The suggestion clearly troubled some of these children; a few even reacted by themselves becoming aggressive. At 6, both reactions had virtually disappeared, while aggressive actions with the dolls had increased both in number and in freedom.

The naughty deed is most commonly laid at the door of a child doll, generally the one treated as a sibling ($C_{non\text{-}ident}$). Nevertheless it is worth noting that from one-sixth to one-eighth of each group made a parent doll naughty. The commonest parental misdeed was fighting with the other parent; rarely was a parent made to hurt a child. In general, though personal aggression is the largest category, and destructive behaviour common enough to be classed on its own, it was remarkable how often the 'naughtiest thing' that could be named was some peccadillo such as going on the bed or in the bath, spilling, splashing, or crying. Some such responses were probably due to inhibition of aggressive fantasy; others seemed, from the manner in which they were given, to reflect an upbringing in which any action that even slightly disarranged the adults' world was considered a serious misdemeanour.

(b) *The final outcome*. Regarded as a problem, this situation differs from the others in several respects. First, the possible outcomes, and their significance for the child, will vary according to which doll is the culprit and according to the misdeed. Secondly, some form of punishment or reproach is implied, for the great majority of children, in the suggestion of naughtiness. We have counted the outcome punitive only where (i) punishment closes the incident and nothing (unless it be crying or running away) is elicited by further questions, or (ii) punishment is repeated or added to when S is asked what will happen next. (If punishment is violent or vindictive, we have classified the response as aggressive.) Thirdly, genuine constructive solutions are rarer than in other problems, and presumably demand a greater degree of maturity and independence of approach, especially in the face of the suggestion that the culprit should be 'very naughty'.

In Table 9 we can see the growth of constructive behaviour, a process in which girls seem to lead the way. It may be that unemotional acceptance of punishment, simply closing the incident, represents a halfway stage in this development. Both sexes show increased freedom at 6 to accept and use the fantasy of naughtiness, by a sharp drop in null responses and increases in aggression and in playful extension of the theme, but there is nonetheless a high incidence of anxiety, shown overtly by many boys, including some who were also aggressive.

(c) *Attitudes to 'good' and 'bad'*. In the first version of the test we sought to elicit

VOL. 2 1961

TABLE 9. NAUGHTINESS: FINAL OUTCOME

	4 years		6 years	
	Boys	Girls	Boys	Girls
Constructive responses:	8	14	15	28
Solutions:				
Reparation, or damage undone	2	7	8	9
Reconciliation	5	5	3	12
Modifications:				
Naughtiness treated playfully	1	2	4	7
Punitive responses: main	11	23	21	19
Simple punishment, no sequel	6	17	8	5
Repeated punishment	0	5	4	2
Crying, running away after punishment	5	1	9	12
main and additional:	13	23	23	26
Aggressive responses: main	11	4	12	10
main and additional	14	7	19	14
Anxious responses: additional	8	6	14	3
Passive responses: no consequences	10	9	1	3
Null responses:	14	11	5	1
	54	61	54	61

the subject's attitude to reparation, if this were not spontaneously offered, with the question, "What does he do to be good again?" We found, however, that this question had no meaning for the majority of 4-year-olds; of 30 who were asked, only 9 showed understanding of the question (4 declaring the culprit still naughty, 4 showing a desire for reconciliation, and 1 suggesting a reparative deed—"She'll wash the bath").

TABLE 10. IS THE CULPRIT MOSTLY GOOD OR BAD?

Culprit—	C_1 or C_2		Baby		M or F		Totals	
	4 years	6 years	4 years	6 years	4 years	6 years	4 years	6 years
'mostly good'	11	9	1	3	8	5	20	17
'mostly bad'	21	40	3	5	6	7	30	52
'good and bad'	1	6	0	1	0	0	1	7
Null responses							27	2
							78	78

We therefore shifted to the more general question, "Is he mostly good or mostly bad?" As this was asked of only 78 children at 4, we have confined our analysis to this subgroup, and have excluded sex differences, which were negligible, from Table 10.

While the answer 'bad' was commoner than 'good' at both ages, the difference became marked at 6, while null responses almost disappeared and a handful gave the mature response 'part good, part bad'. The preponderance of 'bads', however, occurred only when the culprit was a child, and this was scarcely ever C_{ident}; indeed, in choosing a child to be naughty, the subject might be expected to dissociate himself from it, and to treat it as a scapegoat for his disowned guilt feelings. The same might

TABLE 11. TOILET LAPSE

	4 years		6 years	
	Boys	Girls	Boys	Girls
(a) What will happen?				
Constructive responses:	18	27	18	30
Solutions:				
Child toileted or washed	13	18	5	10
Floor cleaned	5	7	8	19
Modifications:				
B did it, etc.	0	2	5	1
Punitive responses: main	12	14	15	21
main and additional	12	14	17	23
Aggressive responses: main	5	1	3	1
main and additional	10	2	6	4
Anxious responses: additional	3	2	2	1
Initial passive and Null responses: (analysed below)	19	19	18	9
(b) What will M do?				
Constructive responses:	2	2	7	0
Punitive responses: main	4	9	6	5
main and additional	8	16	11	9
Aggressive responses: additional only	4	0	0	0
Anxious responses: additional only	2	3	0	0
Final passive responses:	2	2	0	1
Final null responses:	11	6	5	3
	54	61	54	61

happen if the baby were chosen; but here, and more especially if the choice fell on a parent, many various motives could enter in to obscure the picture. Strong affect was commonest where parents were made naughty.

7. *Sphincter control (Toilet lapse)*

Having produced a toy W.C. and hand basin E remarks in a neutral voice, indicating $C_{non\text{-}ident}$, "This one has done a weewee on the floor; what will happen?" If a parent is not introduced, S is asked what M would do if she saw it. He is then asked if C_{ident} ever wets the floor, or the bed.

In Table 11, it is remarkable that more 4-year-olds thought of attending to the child, and more 6-year-olds (especially girls) of cleaning the floor. Punishment was extremely frequent, most of it being given spontaneously. This is in marked contrast to the children's fight, in which most of the punishment was elicited by the suggestion of parental action. The supplementary question in the toilet scene again produced punishment more often than anything else, even at times from children who had already given a constructive response.

The mention of wetting produced aggression in a quarter of the 4-year-old boys, and null responses in another fifth. These were uncommon in the other groups. Anxiety was rare, and modifications few. We may compare this picture with that obtained from the problem of the spilt food, in which the emphasis was on restoring order, with less punishment, but more anxiety on the one hand and more recourse to playful modification on the other. The toilet lapse seems to present a simpler problem to most children, and to arouse less anxiety, probably because it is regarded as a clear-cut offence, which being committed by $C_{non\text{-}ident}$, is punishable without conflict.

That the matter was regarded seriously, however, was evident from the solemnity of the replies to the question concerning $C_{ident.}$ So many 4-year-olds answered this with an air of confidential truthfulness that we were surprised to find very little

TABLE 12. DOES C_{ident} EVER WET THE FLOOR OR BED?
(COMPARISON OF REPLIES WITH SUBJECTS' ACTUAL BLADDER CONTROL)

Subject's response to question about child-doll	Subject's reported bladder control: any wetting in past year			
	4 years		6 years	
	S has wet	S has not wet	S has wet	S has not wet
C wets (floor and/or bed)	24*	24†	17*	12†
C does not wet	27†	23*	30†	49*
Null response	9	8	2	5
	60	55	49	66
Affect and avoidance	12	15	4	6

* agreeing with reality †contrary to reality

A further breakdown, not shown, revealed little difference between occasional and chronic wetters.

correlation between their replies and their actual reliability of bladder control, as reported by mothers. Table 12 shows, at 4, similar numbers affirming and denying that C wets, among both 'wet' and 'dry' subjects; at 6, a greater tendency to denial in both groups, though the increase was smaller in those who had wet in the past year. Affect and avoidance, commoner at 4, were also distributed between 'wet' and 'dry' children in rather similar proportions. A further breakdown, not shown, revealed little difference between occasional and chronic wetters. We must conclude that there is no simple relationship between a child's actual bladder control and his fantasies and feelings about the matter; the achievement of 'dryness' does not always mean the end of the conflict, and individual factors, such as the residue of conflict aroused during toilet training, must enter in to produce a wide diversity of affective pattern.

(8) Nocturnal fantasy

(a) Child awake. In the final scene, S is encouraged to put the family to bed. When he has done so, E suggests that it is night and everyone is asleep except C_{ident}, who has woken up in the dark. What will he do? (See Table 13.)

VOL. 2 1961

TABLE 13. CHILD AWAKE

	4 years		6 years	
	Boys	Girls	Boys	Girls
Constructive responses:	30	41	39	51
Solutions:				
Straight back to sleep	14	20	4	12
Attends to own needs	3	5	14	17
Seeks company	4	12	9	10
Modifications:				
Daytime: all wake	3	2	5	4
Fantasy, returning to sleep or safety	5	0	3	6
Fantasy, not returning	1	2	4	2
Punitive responses: main	0	6	2	1
main and additional	1	7	5	4
Aggressive responses: main	2	0	4	1
main and additional	4	1	7	3
Anxious responses: additional	5	6	10	4
Passive responses:	8	5	2	2
Null responses:	13	9	7	6
Omissions	1	0	0	0
	54	61	54	61

TABLE 14. DREAMS

	4 years		6 years	
	Boys	Girls	Boys	Girls
(a) Bad dream				
'Genuine' dream content:	10	12	24	31
Aggression in family	3	1	0	5
Other family troubles (e.g. B ill; parents killed)	0	4	1	2
Aggression by outside figures (burglars, Indians, war, etc.)	1	2	6	5
Supernatural figures (ghosts, witches, giants, etc.)	2	4	11	11
Animals (attacking)	4	1	2	7
Impersonal danger (falling, water in bedroom, etc.)	0	0	4	1
Responses other than dream content:	9	17	3	8
(causes of waking, action on waking, comments and associations)—				
with obvious negative affect	5	9	2	5
without	4	8	1	3
Null responses:	33	31	24	22
Omissions:	2	1	3	0
	54	61	54	61
(b) Good dream				
'Genuine' dream content:	4	6	24	40
Material objects (food, toys, clothes, pets, etc.)	2	0	2	6
Experiences (holidays, entertainments, gardens, spring, etc.)	1	3	9	14
Personal relationships (family, friends, getting married, etc.)	0	1	6	10
Benevolent fantasy figures (Father Christmas, fairies, angels)	1	2	7	10
Perseveration from bad dream:	0	2	1	0
Responses other than dream content:	3	4	1	2
Null responses:	43	48	23	18
Omissions:	4	1	5	1
	54	61	54	61

Among the constructive responses there was a shift from the simple, though practical, reply, "He will go back to sleep", commonest at 4, to more active attention to needs for toilet, food, drink or play; while the seeking of company and the introduction of parents, commoner in girls at 4, was distributed between the sexes at 6. More 6-year-olds produced fantasies of a magical, dreamlike character, sometimes developing into long narratives often involving thematic anxiety, especially in boys. C might, for example, leave the house, get lost, meet a robber or a witch and have sundry dire adventures. Individually it was interesting whether S rounded off his story by bringing the wandering child back to bed, invoked the security of morning with everyone waking for breakfast, or left his fantasy in mid-air. There is no doubt that the thought of waking in the dark stirs the imagination of many children.

(*b*) *Dreams.* We conclude the test by suggesting, first that C_{ident} has had a bad dream, which S is asked to describe, and then that he will go back to sleep "and this time, what is the loveliest dream he could have?"

These open invitations to free fantasy (not counted as problems), produced, at 4, rather poor results (see Table 14). Only one-fifth of the children gave responses that could be termed 'genuine bad dreams'—even these were limited to single phrases—and fewer still managed the good dream. Apart from the many null responses, there was a large group whose replies missed the point, and dealt with causes of waking, or other associated ideas, suggesting that the subjects had no clear concept of what a dream is. (Mothers of children at this age generally report that they relate no dreams.)

At 6, these irrelevant responses were less common, and about one-half the replies were 'genuine dreams', occasionally elaborated, but still the *carte blanche* defeated many children and null responses were again frequent.

Among the bad dreams, supernatural figures made up the largest category, with aggression by outside people and wild animals next—all themes familiar to children through stories, television, etc., and their own imaginations rather than through actual experience. Realistic bad dreams were few. The good dreams, by contrast, dealt predominantly with pleasant experiences the child had presumably enjoyed, or wishful fantasies often related to the adult world, e.g. little girls dreamt of getting married, and a boy of "smoking a fag". Even the angel brought "a new house and car"!

In short, with children as with adults, frightening fantasies tend to transcend reality, while pleasant ones seldom rise above the prosaic. Hell is always easier to picture than Heaven. But in general the dream questions produced little overt affect at either age.

OVERALL TRENDS

When responses to all the problems are combined, certain general trends emerge. From Table 15, the following points arise:

Constructive responses

(1) Constructive responses comprise a majority, which increases with age,

VOL. 2 1961

TABLE 15. OVERALL DISTRIBUTION OF RESPONSES BY CATEGORY.*

	4 years		6 years		Significance levels†		
	Boys	Girls	Boys	Girls	Sex diff.		Age diff.
No. of Responses	506	564	520	580	4y	6y	
No. of Children	54	61	54	61	*P*	*P*	*P*
Constructive							
% of responses	50·4	63·5	63·8	72·8	<0·001	<0·001	<0·001
% of children	96·3	100·0	100·0	100·0	N.S.	N.S.	N.S.
Punitive							
% of responses	10·6	16·3	19·0	18·8	<0·01	N.S.	<0·001
% of children	53·7	77·0	83·3	85·2	<0·01	N.S.	<0·01
Aggressive							
% of responses	13·4	4·4	13·1	7·1	<0·001	<0·001	N.S. (girls <0·10)
% of children	46·3	32·8	66·7	37·8	N.S.	<0·01	<0·10 (boys <0·05)
Passive							
% of responses	10·1	7·8	3·8	4·0	N.S.	N.S.	<0·001
% of children	66·7	49·2	44·4	47·5	<0·10	N.S.	<0·05 (boys <0·02)
Null							
% of responses	24·9	13·7	10·0	5·0	<0·001	<0·01	<0·001
% of children	83·3	70·5	59·2	41·0	N.S.	<0·10	<0·001
Anxious							
% of responses	13·9	8·5	9·4	3·6	<0·01	<0·001	<0·001
% of children	57·4	41·0	37·0	32·8	<0·10	N.S.	<0·05

† This table shows (a) out of the total number of responses given by each age-sex group, the percentage receiving scores in each category (these percentages add to more than 100 because the same response may receive main and additional scores in different categories. For distribution of main scores only, see Fig. 1); (b) out of the number of children in each group, the percentage giving one or more responses in each category.

* Significance of differences is calculated by the chi-square technique, treating the four sets of responses as independent samples. Since the same children were involved at 4 and 6, their responses would probably be more similar than those of different children, so that significance of age differences may be under-estimated. More exact tests will be possible on investigation of individual changes from 4 to 6.

reflecting intellectual, emotional and social maturity. Virtually all children give some constructive responses.

(2) Girls exceed boys in constructive responses at both ages. The differences are highly significant. If constructive responses represent a socialized attitude, then in our sample this attitude is developed in girls at 4 to an extent only just equalled by the boys at 6.

(3) When modifications are taken separately (not shown in Table 15) the differences are much smaller; i.e., boys achieve constructive modifications almost as often as girls.

Punishment and aggression

(4) Girls give significantly more punitive responses than boys at 4 years. Boys increase significantly with age, drawing level with the girls at 6. This increase represents a greater number of boys using punishment at the later age.

(5) Boys give significantly more aggressive responses than girls at both ages, but at 4 the number of boys involved is not significantly greater, i.e. those boys who show aggression at 4, tend to do so in more situations.

(6) At 6, an unchanged number of aggressive responses is spread over considerably more boys, while about the same number of girls as at 4 show rather higher total of aggression.

VOL. 2 1961

Passive and null responses

(7) Passive responses decrease with age, especially in boys, of whom significantly fewer give these responses at 6 than at 4.

(8) Null responses decrease markedly with age in both sexes, both in total and in number of children concerned.

(9) Boys give significantly more null responses (of all types) than girls, at both ages. Six-year-old girls give very few of these.

Anxiety

(10) Boys exceed girls significantly at both ages in signs of anxiety. Here the excess at 4 is mainly due to a greater number of boys being involved, whereas at 6 we find a concentration of anxious responses in a limited number of boys.

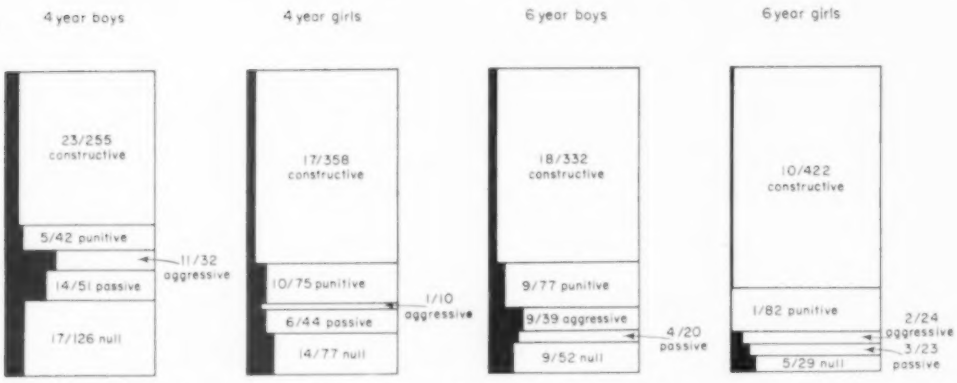
(11) Anxiety decreases with age in both sexes; the decrease being accounted for by the smaller proportion of children, especially boys, involved, and in girls also by a decrease in concentration of responses.

The above statements take no account of the number of responses in any one category given by each individual child. A method of doing this will be described in a future paper. Mean scores for the four age-sex groups, calculated by this method, show differences which agree with the findings reported here.

Types of response associated with anxiety

Fig. 1, besides giving graphic representation of the distribution of main responses, shows the association of anxiety with the several categories of response. From the relative lengths of the shaded sections it can be seen that:

FIG. 1. Distribution of signs of anxiety by category of response.



Depth of column is proportional to number of main responses in the category. The shaded area shows proportion of anxious responses in each category. The fractions are to be read thus: "23/255 Constructive" means that of 255 constructive responses given, 23 showed signs of anxiety.

(12) In boys at both ages, the category of response that is associated with anxiety in the greatest proportion of cases is aggression. In girls this association very seldom occurs, anxiety occurring more often with null responses.

(13) Passive and null responses are accompanied by anxiety in an appreciable proportion of cases in all groups.

(14) Anxiety occurs with about one-eighth of the punitive responses of boys at both ages and of girls at 4. In girls at 6 the anxious element has disappeared from punishment.

Comparison of responses to individual problems

Fig. 2 shows the respective incidence of punitive, aggressive, anxious and null responses of each group to the individual problems. From this we can summarize as follows:

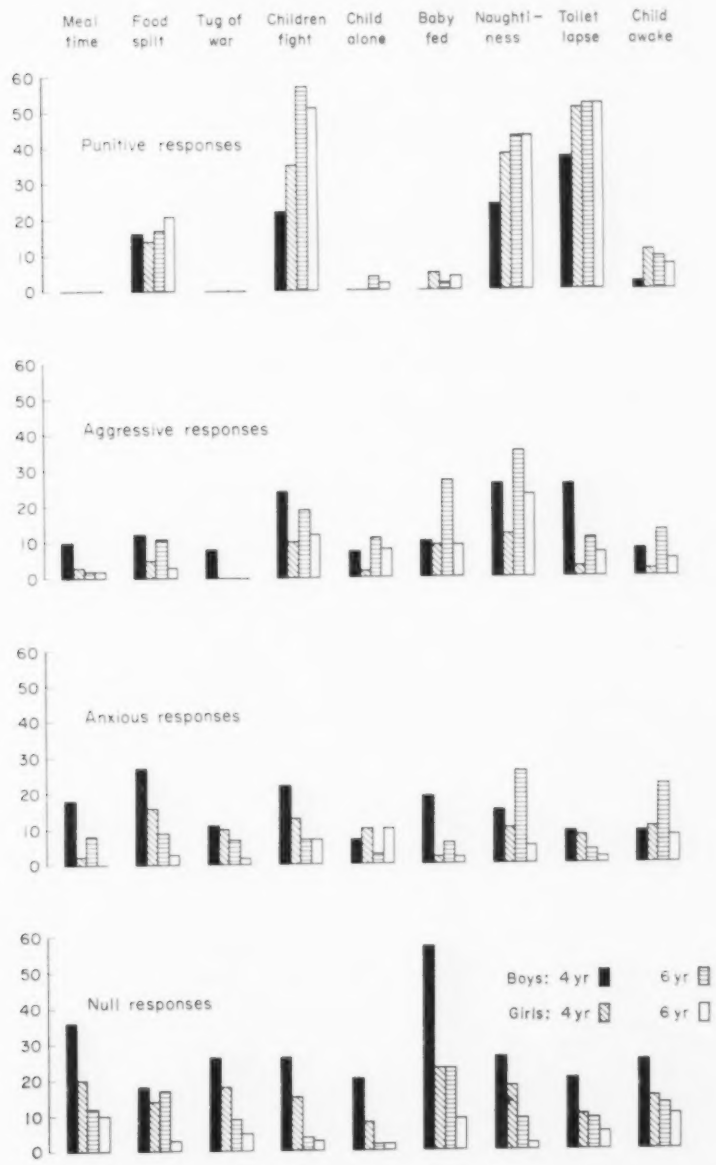
(15) *Punishment* is administered most frequently at 4 for the toilet lapse; at 6, even more frequently for fighting. Punitive outcomes of the naughtiness scene also increase with age, especially in boys.

(16) *Aggression.* While the sex difference in aggression is spread over all situations at both ages, the boys show a marked increase with age when the baby is fed, and a compensating decrease in the toilet scene. The girls show small increases in several items, the largest being in the naughtiness problem.

(17) *Anxiety.* The situations which produce most signs of anxiety at 4 are the spilt food, the fight, and (in boys) the feeding of the baby and the mealtime. All of these produce far less at 6. At the latter age, boys show more overt anxiety in the naughtiness scene (sometimes associated with aggression), and more thematic anxiety when C wakes in the night.

(18) *Null responses* show remarkable consistency between groups from problem to problem, the boys always exceeding the girls and the 4-year responses exceeding the 6. The feeding of the baby produces a peak in all groups.

FIG. 2. Incidence of certain types of response, by individual problem.



VOL. 2 1961

General findings

(19) Overall sex differences in all categories are smaller at 6 than at 4.

(20) Four-year-old boys present a picture of refusal or inability to respond, anxiety often linked to aggression, and comparative paucity of constructive solutions which calls for explanation.

DISCUSSION

It is well known that young children commonly reveal in doll play strong feelings in relation to the figures representing their parents and siblings. The present investigation was designed to bring these feelings and their attendant fantasies into focus, by depicting certain situations of daily life; to explore the growth of constructive attitudes to these situations; and thus to shed a little light on the problems of adjustment confronting boys and girls respectively in our culture. Our findings, not startling in themselves, do raise afresh certain issues that are crucial for an understanding of children. What are the sources of the conflicts which underlie these strong feelings? To what extent do they lie in a cultural or sub-cultural way of life? How is our ambivalent attitude to aggressiveness reflected in children's minds? How are their fantasies about punishment related to social and emotional development? Why does a group of boys, equal in intelligence to the girls, produce responses that are markedly less advanced according to the standards of socialization current in our culture, and that include, besides more aggression, significantly more anxiety and failure to cope? On such large issues we can do no more than offer a few observations.

Evidence is accumulating to the effect that boys, besides being slower and less predictable in their physical development than girls (Tanner, 1955), tend to be more reactive, and consequently more vulnerable to environmental stress of any kind—to starvation, atomic radiation (Greulich, Crismon and Turner, 1953), illness (Hewitt, Westropp and Acheson, 1955), the handicaps of a poor social milieu (Acheson and Hewitt, 1954) and the stress of entering school (Olson, 1935). One possible reason for their emotional behaviour in doll play may therefore be a greater constitutional sensitiveness to stimuli in general. However, this does not account for the forms it takes, the particular situations that precipitate it, or the changes it undergoes from 4 to 6. To understand the situation more fully we have to consider what is involved in being a child.

For all children conflict must arise (a) between their natural adventurous and aggressive impulses and the restrictions that have to be imposed on them; (b) in what they perceive of their parents' sympathy with the former and enforcement of the latter; (c) between their positive and negative feelings toward their parents, and especially toward the chief caretaker, usually the mother, who has to do most of the thwarting; (d) between their desire to become independent and the temptation to regress to a state of protected dependence. All these conflicts are directly observable and must sum to a considerable load, even before one begins to take into account the more inferential conflicts of Oedipal doctrine.

Whether for biological or cultural reasons, boys are found in almost every part of the world (Tanner and Inhelder, 1958) to be typically more outgoing, exploratory, adventurous and aggressive, while girls appear, from an early age, to be concerned,

even in their play, with home life and domestic regulation. In our own culture, though less than in some, boys are expected to be both more aggressive and more independent, and the "taboo on tenderness" discussed by Suttie (1935) operates from an early age. Their ambivalence toward the mother is unmitigated by the identification with her female role which girls enjoy. Their greater urge to independence seems at times to result in a stronger regressive pendulum-swing toward dependent and immature behaviour.

Thus all four sources of conflict mentioned above are liable to place a greater strain on the boy. This must make it more difficult for him to develop socially, more difficult to please himself and to please others, more difficult to choose a simple course of action and carry it through. Hence perhaps the passivity, anxiety and frustration that we have seen in the doll play of so many 4-year-old boys. Frustration may produce aggression, or alternatively, the aggressive impulse may be counteracted by fear of its consequences and further anxiety result. It may be, as compensation, that conflict promotes empathy: most of the children who showed strong feelings also displayed real concern for one or more of the doll characters, several of the most aggressive boys being particularly tender toward the baby. This recalls Murphy's (1937) finding of a positive correlation between aggression and sympathy in nursery school behaviour. Girls, though not exempt from conflict, can and do identify with their mothers' activities; they enjoy mothering babies, and also enjoy punishing their fantasy children, but such punishment is seldom aggressive, and therefore does not arouse anxiety as it is apt to do in boys.

VOL. 2 1961

By the age of 6, several factors have entered in to ease the situation. In this country children have already attended school for a year, and in places where this is not so they will generally have been able to mix with groups of their peers. Mixing involves getting accustomed to aggression in others, which must help the child to tolerate it in himself, for as he gains in experience and maturity he becomes more sure of his own internal controls. At the same time he comes to accept external controls imposed by the rules of society. When he goes to school he comes under the authority of adults other than his parents, which further reduces the emotional burden of family life. His developing interest in, and mastery over, the world of real things, freeing him from the dominance of fantasy, is another aspect of his passage from the Oedipal to the latency phase. All this makes living simpler and the expression of the normal range of feelings less dangerous. This would account for the decrease in our findings of anxiety, and of inhibition (represented by null responses), with the concomitant increase in constructive action, but also in punishment, and the more widespread occurrence of a less intensely emotional form of aggression.

Socialization is inevitably bought at the price of conformity, which must often mean a conventional outlook, with, in some cases, a loss of spontaneous creativeness. This, we suspect, is another reason for the rise in punitive and other conventional responses at the expense of more imaginative solutions. It seems probable that the school can do much to help or hinder emotional development, both by fostering, or discouraging, original thought and creative fantasy, and by the balance it maintains between permissiveness and control.

There is of course a greater awareness of the boundaries between fantasy and reality as the child gets older. This was apparent in the children's manner of playing

with the dolls and their conversation about them. One 4-year-old boy asked anxiously "They are not real, are they?" At 6 a more characteristic comment was "Why hasn't the bath any taps?" showing a more detached and critical interest in realistic detail. On the other hand, many 6-year-olds, just because they were clearer about the dividing lines between play and real life, seemed more able to indulge in flights of fancy at fairy-story level, including frightening themes and playful aggression of a slapstick kind. When time permits, we hope to undertake a study comparing children whose range of play was narrowed in the course of socialization with those in whom creativeness flowered when they were freed from inhibition due to excessive affect.

We have paid much attention to the element of conflict shown in children's responses. It has, however, to be borne in mind, that the problems presented were bound to arouse such feelings, and it is all the more interesting to note that the children, even the younger boys, gave more constructive responses than all other types combined.

SUMMARY

By means of a standard doll-play technique administered to a group of 115 normal children at 4 and again at 6 years of age, an investigation was carried out into the fantasies, feelings and attitudes of boys and girls respectively concerning certain situations of everyday life, and into their ability to solve, in play, simple problems of inter-personal relationships.

It was found that a comparatively high proportion of boys at 4 were unable to respond freely to these play situations, many showing signs of emotional conflict (aggression, inhibition, or an alternation of the two) which precluded constructive solutions. Such indications were far less frequent in girls, but punishment themes were commoner in their play. By the age of 6, the boys' inhibition and anxiety had fallen off, while there was an increase in punishment, but also in constructive responses, and a clearer demarcation between realistic and fantastic kinds of play.

It is suggested that these findings may throw fresh light on certain issues of child development, in particular the ontogenesis of sex differences in outlook and behaviour.

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VOL.
2
1961

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TWO CASES OF DEVELOPMENTAL APHASIA

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1. INTRODUCTION

The concept of 'developmental aphasia' has been used in a number of discussions of children's reading and spelling disabilities, e.g. by Orton (1937), and Macmeeken (1939). Although the terminology is in some confusion there can be little doubt that a concept is needed for referring to a certain specific syndrome (i.e. cluster of symptoms) displayed by an appreciable number of children whose reading and spelling ability falls appreciably short of their intelligence. The difficulties experienced by these children have also been discussed by Hinshelwood (1917), Monroe (1932), Schonell (1942), Blanchard (1946), Hallgren (1950), M. D. Vernon (1957), and Zangwill (1958); but among educationalists in general the problem deserves more attention, in my opinion, than it has so far received.

The main characteristics of the syndrome are (a) reversal of words or letters, e.g. 'was' for 'saw' or *b* for *d*, (b) a special kind of failure in word-recognition and the resultant inability to spell. The precise nature of this failure will be discussed in Section 4. Other characteristics which are thought to occur in some or all cases are (c) cross-laterality, i.e. siting with the right eye in the case of left-handers or with the left eye in the case of right-handers, (d) constructional apraxia, i.e. failure at patterns of the Kohs block variety or at reproducing plans or diagrams, and (e) a history of twinning in the family.

In the present article I wish the term 'aphasia' to be understood in a wide sense. By derivation it means simply 'not speaking', but it is nowadays used to indicate a whole range of disabilities in thinking, recognition, and verbal response in general. These disabilities have been described by Head (1926), Weisenburg and McBride (1935), Eisenson (1954) and many others.

For present purposes the terms 'dyslexia' (by derivation, 'difficulty in reading') or 'alexia' (by derivation, 'not reading')* would have done almost as well, though the disabilities are not limited to failure at reading any more than they are limited to disorders of speech. Hinshelwood's term 'word-blindness' would have been another possibility; but although this term seems to me interesting (see Section 4), it is perhaps too controversial to be used as an explanatory label.

In speaking of 'developmental' aphasia I am contrasting it, as did Orton and Macmeeken, with 'acquired' aphasia. The appropriate powers of recognition and spatial orientation which occur in normal children in the course of development

* Zangwill (1958) uses 'dyslexia'; Orton (1937), though he speaks in another context of 'developmental motor aphasia', refers to the syndrome described in the present paper as 'developmental alexia'.

have in these cases temporarily failed to mature; and while aphasic symptoms in the adult can usually be attributed beyond reasonable doubt to some specific injury, e.g. brain-damage resulting from a bullet-wound, in the case of children suffering from 'developmental' aphasia this is not so, and there is no record of any 'acquired' injury.

It would have been perfectly possible, of course, to refer to the syndrome by some purely neutral term, e.g. 'the omega syndrome'; and in so doing one would be making the minimum possible commitment on the theoretical side. In taking over the phrase 'developmental aphasia' I have deliberately chosen to go further than this. I wish to imply that our understanding of these disabilities in children can be helped by an examination of the whole group of aphasic disabilities in adults. Although there may be no history of actual brain *damage*, in the sense of injury, in the case of these children, their performance is sufficiently similar to that of brain-damaged adults to make us suspect an analogous failure of cortical function. By convention all terms such as aphasia, apraxia, dyslexia, etc., are assumed to carry the theoretical implication that they are caused by failure of function in the cortex; and I have deliberately chosen a term with this implication. Thus to say that a child suffers from dyslexia is not, as some have supposed, simply a high-faluting way of saying that he is weak at reading; it is to link such weakness with comparable weakness in brain-damaged adults, and to recognize the existence of a specific syndrome.

VOL. 2 1961

Some psychologists have objected to labels implying cortical failure of function on the grounds that these labels confuse the issue with regard to remedial teaching. Thus Burt (1946) speaks disparagingly of those who say that "there is little use trying to train non-existent brain-structures" (p. 117); similarly Schonell (1942) suggests that in our present state of knowledge behavioural descriptions are of more use to the investigator than physiological ones, and speaks of the danger of "allow[ing] physiological interpretations to predominate in the field of educational disabilities" (p. 152). Much of the apparent disagreement, however, seems to me to have arisen from argument at cross-purposes. To avoid all possible misunderstanding I should make clear that in labelling a child a 'developmental aphasic' I am very far indeed from implying that he cannot be helped. What I have in mind is a behavioural label with physiological implications; this is perfectly compatible with Schonell's implied view that the practising teacher can learn more from behavioural descriptions than from physiological ones. My objection to the use of a behavioural label *simpliciter* is that in using it we are overlooking the analogies with adult aphasia, and thereby gratuitously depriving ourselves of the chance of increased theoretical understanding. Moreover even if it were shown by some means at a later date that the analogy with cortical failure of function was unhelpful, developmental aphasia would still be an interesting syndrome; one would merely say that the label, with its mistaken physiological commitments, was a misnomer. There would then be an exact parallel with the label 'hysteria', which implies a disease of the womb; hysterical symptoms have not ceased to be interesting just because we now know that they have nothing to do with wombs.

The complaint may still be made that reading disabilities are too diverse to justify the postulation of a separate syndrome at all, and that as a result of postulating it our remedial teaching programme is in danger of becoming too doctrinaire and

stereotyped.* I entirely agree that any remedial teaching programme needs to be adapted both to the individual bent of the teacher and to the individual needs of the child. But even in the case of adults the label 'aphasia' covers wide varieties of disability without thereby ceasing to be useful; and to refuse to classify phenomena at all on the grounds of their diversity is surely to give up the scientific ghost altogether. In general I would say that the main difference between those who assert and those who deny the existence of developmental aphasia lies in the degree to which they are prepared to commit themselves theoretically. And it seems to me an obvious requirement for scientific progress that our concepts should be as theory-laden as possible; it is better to say something and be proved wrong—and I would stress that my conclusions in this paper are tentative and exploratory—than not to say anything at all.

One of the main requirements for the study of developmental aphasia is the collection of further factual data. With this end in view two case-histories will now be presented.

2. BRENDA

Brenda was referred to a Child Guidance Clinic at the age of 10:6. Her father was a professional man and she was being educated as a day-girl at a private school not far from her home. A report from her headmistress said: "Appears very bright and is keen to answer in oral work, but . . . she is very slow at any written work—possibly she is a little afraid of making mistakes. Her entire inability to spell is her great weakness."

Routine testing at the clinic gave the following results: Revised Stanford-Binet test (Terman and Merrill, 1937), Form L, mental age 12:2†; Graded Word Reading

FIG. 1.

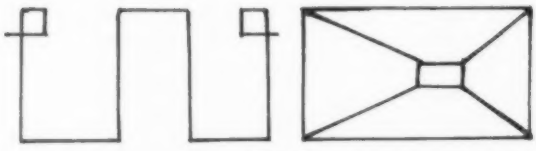

FIG. 2

* I am grateful to Dr. G. A. V. Morgan (personal communication) for a very clear statement of this viewpoint.

† At age 10.6, this gives an I.Q. of 116, but in the case of developmental aphasics there is reason to suppose that such figures are an under-estimation of intellectual potential. Compare Section 5. At the time of testing the Wechsler Intelligence Scale for Children was not yet available.

Test (Schonell, 1945, appendix I), reading age 8·3; age on Dictation Test (Burt, 1947, p. 383) 8·0; age on Oral Mental Arithmetic Test (ibid., pp. 384 seqq.) 7·3; mental age on Kohs block test (Drever and Collins, 1950, pp. 21 seqq.) 9·0 (Vernon's norms).

The incongruity of this performance is clear. The Stanford-Binet result leaves no doubt as to her general ability, but she was clearly displaying considerable weakness as well. This can be shown by more detailed consideration of her performance.

On the Stanford-Binet test she named 39 words in one minute (where 30 counts as a pass at Year XI); she filled in the missing "but" and "because" in the Minkus completion with no hesitation (thus obtaining a pass at Year XII), and her vocabulary score (17) counts as a pass at Year XIV. Yet at Year VII two of her three attempts to copy the diamond lacked symmetry, and, although she saw this and made some corrections, it was clearly a task which she found difficult. Fig. 1 shows her attempt to copy the designs at Year IX. Fig. 2 shows the originals.

In the Kohs Block Test she completed the first two patterns and the fifth,* but although she detected small errors in construction, she did not seem able to grasp the pattern as a whole. In general she could *see* that she had not copied the patterns correctly and was very exasperated with herself, but had extreme difficulty in making the required alternations.

VOL. 2 1961

Examination by an ophthalmic surgeon revealed nothing defective in her eyesight; and a psychiatric examination revealed no serious emotional difficulties. The following are the relevant extracts from the psychiatrist's report: "From the psychiatric point of view she can be considered a well adjusted personality. She is somewhat anxious and at times unsure of herself, but this may partly be due to the strain involved in the clinic situation." Brenda's mother said that she herself had always been a poor speller, but that Brenda's younger sister was not having the same difficulty. There was no history of twinning in the family. Some years ago Brenda had confused *b* and *d* but this tendency had not persisted.

Further tests at the clinic showed Brenda to be right-handed and right-eyed.† Tests were also given with the purpose of throwing light on her specific disability. These were as follows.

(1) Since this type of disability frequently goes with reversals of letters or words, it seemed possible that she actually saw or at any rate reproduced letters in the wrong order. To test this Brenda was required to copy words from a book, writing at full speed; she was given to understand that it was a test of speed. The result was entirely negative, in the sense that no errors of reproduction occurred. This negative result is important since it suggests that her weakness at spelling cannot simply be explained in terms of mis-seeing or faulty reproduction. In any case reversal would not account

* In this version of the test the subject is required to copy from cards throughout (not from the blocks themselves); and from the second pattern onwards the concept of 'half-colour' is introduced, i.e. the subject is required to use blocks whose sides have *two* colours on them, lying on either side of the diagonal.

† The test which I have found most helpful in determining the 'siting' eye in children is the 'hole-in-paper' test. This consists of making a tiny slit in a piece of paper and telling the child to 'spy' some particular object in the room. The siting eye will be that to which the child draws the paper. The test should be repeated several times, i.e. the child should be required to look at several different objects, and to remove the paper from his eye between each trial.

for *all* her spelling mistakes, and, as we shall see later, some more comprehensive theory in terms of failure of word-recognition is called for.

(2) Brenda was asked to draw a bicycle. She had extreme difficulty in starting, even when shown a bicycle outside the clinic. The following are her main efforts. (Fig. 3.) At no time during the test did she succeed in constructing the bicycle as a whole.

FIG. 3.

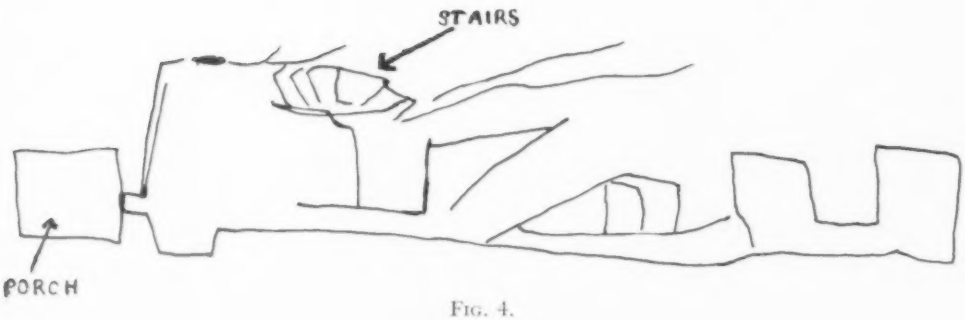

FIG. 4.

(3) She was asked to draw a plan of her home. After a hard struggle she produced a quite astonishing result. (Fig. 4.)

She indicated where the stairs were, and said that the house was square! She could see that her diagram was wrong and was very disgusted with herself, but was quite unable to put it right. This type of disability, along with her failure at the Kohs Block Test, can appropriately be labelled 'constructional apraxia'.*

* It has recently been suggested to me that the diagram suggests the work of a person *walking through* the house from room to room but unable to obtain a visual grasp of what the house was like as a whole. Similarly in the bicycle-drawing she seems to have shown "what you steer with" (handlebars) and "what you sit on" (saddle) without being able to integrate them into spatial relationships as a normal person can by means of vision.

The following are samples of her spelling. Those under (1) are extracts from her school books during the year before referral. (2) contains results of tests given at the clinic.

(1) . . . whde like to go to (cs) school whte Tome
. . . a large bees of stfe calld a carpet
. . . cooking is den on the sotof
. . . the both is to be fond in the bothroom
. . . he whnet, and his sissder did the whsing
. . . she ackte
. . . ofar there
. . . it is plasant to bathe and slebas in the sea when it is shmth and cam
. . . we kach shreps
. . . wather is rogff and the spera lashes high in the air it is buter to whach the anger wafs from a safe disdons up the beech
. . . prtty calad catins
. . . he is a dag

VOL. 2 1961

(2) . . . I saw hre run by in the wet
. . . A bird nets in the grss [deleted] gress
. . . The little kintton
. . . I have askt fourty girls . . . noen falled
. . . Imatet there indosty
. . . Axsplan every santens
. . . The red bod fall on the wet mad
. . . My dog cut his lag on an opon tin

Key

(1) . . . would like to go to school with Tom
. . . a large piece of stuff called a carpet
. . . cooking is done on the stove
. . . the bath is to be found in the bathroom
. . . he went, and his sister did the washing
. . . she asked
. . . over there
. . . it is pleasant to bathe and splash in the sea when it is smooth and calm
. . . we catch shrimps
. . . water is rough and the spray lashes high in the air it is better to watch the angry waves from a safe distance up the beach
. . . pretty coloured curtains
. . . he is a dog

(2) . . . I saw her run by in the wet
. . . A bird's nest in the grass
. . . The little kitten
. . . I have asked forty girls . . . none failed
. . . Imitate their industry

. . . Explain every sentence
. . . The red bud fell on the wet mud
. . . My dog cut his leg on an open tin

Even in the case of three-letter words she would hesitate, look at the tester, and say "Is it right?" At one point she wrote "het" instead of "yet"; when shown the sentence again she did not notice any mistake for about one minute, after which she said "I've put 'het' ", and corrected it.

During the test situation she occasionally tried out the 'look' of words on a rough piece of paper.

Discussion of Brenda's spelling

It is clearly puzzling that such odd spelling-mistakes should occur in the work of a girl of relatively high I.Q. In what follows I shall argue that this spelling, despite its oddity, is none the less not unintelligent spelling, and I shall offer a hypothesis in terms of which a large number of the oddities can be explained.

This hypothesis is that *Brenda was relying in large measure on the tactile-kinaesthetic data resulting from her tongue and lip positions and movements when she pronounced the words.* In other words, it was first necessary for her to say the words either aloud or sub-vocally before she wrote them, and her spelling is an attempt to put on paper the written symbols for tongue and lip positions and movements, not the written symbols for words as such. (For further discussion of what is involved see Section 4.)

It follows from this hypothesis that confusion between letters is most likely whenever the tactile-kinaesthetic data are such as to make discrimination difficult. I have therefore attempted to analyse her spelling with this consideration in mind.*

(1) *Mistakes over vowels.* In the first place little tactile-kinaesthetic information is obtainable by pronunciation of vowels; and it would therefore be evidence in support of our hypothesis if mistakes over vowels were relatively more numerous than mistakes over consonants.

This is in effect what we find. Analysis of the above spelling gives the following table:†

	Correct	Incorrect	
Consonants	316	36	$\chi^2 = 26{\cdot}23$
Vowels	160	58	$P < 0{\cdot}001$

This result gives us a high degree of confidence that in any of Brenda's written work at this stage of her development one might expect more errors over vowels than over consonants.

If we are dependent simply on the tactile-kinaesthetic data arising from tongue and lip positions and movements, it is often difficult to tell whether a vowel occurs or not.

* I am particularly grateful to my colleague Mr. E. L. Tibbitts, lecturer in Speech Education, for his help with this part of the paper.

† With data of this kind accuracy of scoring is impossible down to the last detail on account of additions, omissions, faulty order, etc. My general policy has been as follows: any omission or incorrect addition, whether of a consonant or of a vowel, has counted as a mistake (hence the slight discrepancy between N in the above table and the total number of letters in the sentences examined), but the scoring does not take account of the fact that letters occur in the wrong order.

Our hypothesis therefore explains how it was that Brenda was able to string consonants together with no vowels at all and sometimes add vowels in the wrong place. Examples of the first type of mistake are "stfe" and "shmth", and of the second, "spera", "slebas" and "sotof".* Where the superfluous vowel is inserted it is probable that Brenda was saying the word extra slowly. No doubt this was the result of an attempt to be extremely careful, and it is worth calling attention to the large expenditure of effort which spelling involved for her. We may be quite sure that for the developmental aphasic spelling is extremely hard work.

The inclusion and omission of the letter *e* appears for Brenda to have been a matter of guesswork. No doubt she had been told that some words carried the final mute *e*, but had no means of telling when it was or was not required. Thus she includes an unwanted final *e* in "whde", "whte", "Tome", "stfe" and "ackte", and omits a required *e* in "bees" and "sotof".

(2) *Mistakes over consonants.* If our hypothesis is correct one would expect all or most of the mistakes over consonants to occur when the tactile-kinaesthetic cues are least informative. This is in fact what we find. Three main classes of mistake will be considered first, viz. (i) substitutions of an incorrect letter for a correct one, (ii) addition of incorrect letters, (iii) omission of correct ones.

VOL. 2 1961

(i) There are no tactile-kinaesthetic cues for distinguishing a soft *c* from an *s* nor a hard *c* from a *k*. This would explain why "catch" is spelt with a *k* ("kach"), why *s* is substituted for *c* in "distance" ("disdons") and "sentence" ("santens"), and why *c* is substituted for *s* in one of the spellings of "asked", viz. "ackte". The *d* in "asked" is in fact pronounced as a *t*, which would explain the substitution of *t* for *d* in both spellings ("ackte", "askt"); and substitution of *d* for *t* in "distance" ("disdons") and "sister" ("sissder") is made particularly easy because of the *s* immediately beforehand.

b and *p* are similar to each other as regards position of the lips, as are *f* and *v*; in both cases the only differences are in voicing, breath-force, and (in the case of *b* and *p*) aspiration; and these differences are sometimes minimal. Examples of confusion over *b* and *p* are "slebas" for "splash" and "bees" for "piece". Examples of confusion over *f* and *v* are "ofar" for "over", "wafs" for "waves", and "sotof" for "stove". There is the further complication in this case that Brenda lived in an area where *f* and *v* are not always very clearly distinguished.

The examples cited in this section account for 14 out of the 36 mistakes.

(ii) The addition of *s* after *x* in "axsplan" ("explain") is phonetically intelligible if we assume Brenda to have been saying the word slowly and carefully. The addition of *h* after *w*, as in "whde" ("would"), "whte" ("with"), "whnet" ("went"), "whsing" ("washing"), and "whach" ("watch") is also understandable if we assume that she knew that *in some cases w* would be followed by *h*; in that case the absence of tactile-kinaesthetic data would make the decision whether to include or omit the *h* a matter of guesswork.

The examples cited in this paragraph account for a further 6 out of the 36 mistakes.

(iii) There are no tactile-kinaesthetic cues for determining whether there are

* In some cases a particular misspelling may be the combined effect of several factors. It will, I think, be clear from the context which particular factor is being referred to.

two *t*'s in "better", two *f*'s in "stuff", or two *l*'s in "failed", nor is the *y* in "spray" represented by any very definite tongue or lip movements. This explains a further 5 out of the 36 mistakes.

Mistakes also occur in connexion with the "liquids", i.e. *l*, *m*, *n*, and *r*. It is scarcely surprising that the *l* is omitted from "would" ("whde") and from "calm" ("cam"). The *m* in "shrimps" is not a sound prominent in normal speech, which makes sense of Brenda's "shreps"; and the converse to this appears to have happened when she put in the extra *n* in "kitten" ("kintton")—presumably because she knew that *sometimes* the extra *m* or *n* was needed. The *r* in "coloured" and "curtains" is not represented by tongue or lip movements; hence we have "calad" and "catins"; "indosty" for "industry" appears to be the result of rather slack pronunciation.

The examples in this paragraph explain a further 7 mistakes. "Rogff" for "rough" accounts for a further one. There remain the extra *h* in "smooth" ("shmth"), the omission of *h* in "splash" ("slebas") and "a bird nets" for "a bird's nest".

In the case of "a bird nets" it is not at all clear what has happened. Possibly Brenda was confused and simply put in an *s* somewhere without having time to work out where exactly it should go, or possibly this is a case of a genuine reversal.

Reversals. At first glance it might seem that Brenda's spelling is full of reversals. A closer examination, however, will, I think, reveal that there are relatively few clear-cut cases of this. Thus "whte" and "whsing" are not necessarily examples of a misplaced *h*; the *h* may simply have been added to the *w*, as in "whde" and "whach". Even "hre" for "her" may not be an ordinary reversal; the *e* may simply be a final mute *e*, as in "stfe" and "whde"; "noen" for "none" is similarly ambiguous. To start the word "school" *c-s* may indicate some directional confusion, as may "nets" for "nest". But it is clear that her spelling disability is certainly not *limited* to mistakes of the 'reversal' variety.

Remedial teaching. A remedial teaching programme, based on the above theory, was carried out by the present writer, who was given *carte blanche* by the head of the clinic team to explore all possible methods. He decided to pay special attention to her spelling rather than to reading or arithmetic, and to encourage her to concentrate on the tongue and lip movements involved in saying a word and to associate these movements with particular letters. This was what she had been implicitly doing already, but the matter was now made explicit to her. Once weekly sessions were arranged, lasting about half or three quarters of an hour.

The main problem was that of vowels. To start off, Brenda was required to make five columns in an exercise book; the first was headed by the word 'bag', the next by the word 'beg', and the third, fourth, and fifth by the words 'big', 'bog', and 'bug'. Each column had a 'noise', which was its vowel sound with the consonants removed. Using the International Phonetic Association (I.P.A.) script,* we may symbolize these five noises as æ, e, i, ɔ, and ʌ. Brenda was required to make the 'noises' for each column in turn, concentrating on the tongue movements and the vibration of the vocal bands as she did so. The 'noise' could easily be associated with

* See *Everyman's English Pronouncing Dictionary*, Daniel Jones (1957). Needless to say no attempt was made to teach Brenda anything about I.P.A. symbols, which are reproduced in this paper only to indicate noises which were given to Brenda orally.

a particular letter, and thus any word with the same 'noise' as, say, 'bag' would necessarily have to have the same letter, viz. *a*, as its vowel. 'Cat', 'ham', etc. would go in the 'bag' column; 'cot', 'dog', etc. would go in the 'bog' column, and so on. The consonants were left in the main to look after themselves, since apart from *f* and *v*, etc., the phonetic distinction between them is not difficult.

The next stage was to introduce a new set of 'noises'. The 'noises' chosen were the long a, the long i, and the long o (I.P.A. script, ei, ai, and ou) and the three columns were headed by the words 'tame', 'time', and 'tome'. Brenda was required to pay attention to the contrast between the æ 'noise' (short a) and the ei 'noise' (long a), and was told that when the long vowel occurred an e was necessary at the end. Thus 'mate' carries a final e, 'mat' does not. (Only three columns were introduced into her book here. Columns corresponding to the long e and the long u could have been made (I.P.A. script, i: and ju:), to allow for words such as 'serene' and 'tune', but this seemed an unjustifiable complication since most words with the i: 'noise' are not spelt e-blank-e, and words ending u-blank-e are not only few but sometimes have different pronunciations, e.g. 'tune' and 'fluke'. At the present stage simplicity was essential.)

VOL. 2 1961

Next, different spellings of the ei 'noise' and the ou 'noise' were introduced, as in 'pain' and 'moat'. Brenda was told that she would simply have to remember which words with the ei 'noise' went like 'mate' and which like 'pain': similarly with 'note' and 'moat'. She was also told that there were two different spellings for the i: 'noise'; some words went like 'see' and some like 'sea'. I explained that in these cases she might sometimes be unlucky and guess wrong, but this would not be her fault provided she set about the task in the way I had taught her.

Further 'noises' were introduced, viz. 'oo', 'ou', and 'oi' (I.P.A. script, u:, au, and ɔi), and columns were made in her exercise book with the words 'moon', 'soon', 'root', etc., 'loud', 'out', 'spout', etc., and 'join,' 'avoid', 'loiter', etc. (Words containing more than one syllable such as 'avoid' and 'loiter' were gradually introduced; and once Brenda had become familiar with the suffix '-ation', it was possible for her to spell much longer words, provided they were regular, such as 'procrastination' or 'contamination').

Other columns included words ending in a-y, such as 'may', 'day', etc., words ending in o-y, such as 'joy', 'boy', etc., and words ending in -ight, such as 'might', 'light', 'alight', etc. (The latter, of course, had to be distinguished from other words with the ai 'noise', such as 'time', 'mine', etc.)

In general the purpose was to give her rules to follow whenever this was possible, rather than present her with the formidable task of having to remember every word in the language by heart.

It should be emphasized that the two children on whom this method was used, Brenda and Michael, were both bright children, and that with less bright children the task would doubtless have been much more difficult.

As far as Brenda was concerned the method had its ups and downs. She seemed to take to the method and the teacher satisfactorily, but progress was by no means uniform. Thus one report, 6 months from the start, reads: "Evening of despair. Brenda had a cold, which may account for some of it. Even so she showed remarkable disability. Starting with 'point' she couldn't even make the 'oi' noise (ɔi). We went

laboriously through other words that I'd put on a list, with Brenda guessing wildly at the correct noises. "Pain" was spelt p-i-n-d-e. Definite relapse . . . we shall never get far at this rate." The report for the next week, however, is more encouraging: "Brenda much brighter again this evening. Cold better. Went through last time's list without much trouble."*

An incidental difficulty with the method used (quite apart from its failure to allow for the many irregularities in the English language) is that vowels are pronounced differently in different regions. In Brenda's neighbourhood, for instance, 'bag' can best be understood if one pronounces it something like 'bug', and Brenda was not alone in finding 'bag' and 'beg', as pronounced by the present writer, hard to distinguish.

At one point, towards the end of the remedial teaching sessions, Brenda was required to place her tongue on her upper lip and to spell without moving either of them. This does not, of course, eliminate altogether the possibility of lip and tongue movements, nor the effect of images of movement, but it is a restriction which would be expected, if our main thesis about her spelling is correct, to make matters very difficult for her. She immediately said "This is cruel", and among other misspellings she produced "imagention" for "imagination", "armodelo" for "armadillo", "amatemegal" for "anatomical" and "buciful" for "beautiful". At the same session she was questioned directly about her progress, and explained that she could "see" the words now in a way in which she could not before. "It just came. I can see them in my brain's eye (*sic*); before I was just guessing."

The remedial teaching sessions were discontinued after about a year owing to her family's change of home. Unfortunately no final spelling test was given as a check on her improvement, but a year and a half later, in reply to a follow-up by the Child Guidance Clinic, her headmistress wrote: "Her form mistress says that she has made steady (although not spectacular) progress in spelling and seems quite hopeful about her." The following extract from her school work was obtained:

An Adventure out at sea

. . . We had decided to go on a boat for a week. We packed our things, and ordered a boat. Nexst day we were off. . . . It was about four o'clock, when we arrived, so we got tea rightaway. Ann, our friend was putting a cake on the cloth, when she slipped and disappeared. We called, and called, but we could not fined her. Worried and firghtened we ran over the green slopes calling all the time, but we could not fined her.

We made our way done to the beach, but as we arrived there we found Ann's sandals on the sands, and foot prints round about. Trumbling with firghten we followed the prints, thouth I did not want to, but follow them we did. The led us to a cave covered with seaweed. We pulled the seaweed down, and there was Ann tirde to a roack. Hurriedly we untired her, only to find three men there.

Roslie told us to run. Run we did, and reched the Police taytion looking like scarecrows with seaweed hanging frome us. We told the Police, who run up and court the men. We recived a big rewurd.

* On the human relationships side the following extract from my case-notes may be of interest. The report is of a session about 4 months after she first started coming to me. "Brenda in rather an excitable mood this evening, perhaps connected with her personal relationship to me. She made remarks such as: 'I wish you'd tell me whether it's right or wrong. You just sit there with no expression on your face' and seemed to be definitely 'chaffing' me!" For discussion of the possible relevance of this point see Section 4.

3. MICHAEL

Michael was referred to the clinic at the age of 9:9. His extreme weakness at reading and spelling had already caused his parents concern, and they wished for further investigation.

Routine testing gave the following results: Wechsler Intelligence Scale for Children (Wechsler, 1949), Verbal I.Q. 116, Performance I.Q. 129; Revised Stanford-Binet test (Terman and Merrill, 1937), Form L, I.Q. 128; Graded Word Reading Test (Schonell, 1956, appendix I), reading age 5·3.

As with Brenda there was thus an enormous discrepancy between reading age and I.Q. Examination of individual test-items, however, shows that in his case the constructional apraxia side of the disability was less marked. The scaled score (Mean 10, S.D. 3) on the separate performance items of the W.I.S.C. were:

Block design	12
Object assembly	15
Picture completion	16
Picture arrangement	14

He was bothered by No. 1 of the Block Design, but after failing at 1 and 2 he did 3 and 4 quickly. When shown 5 he said "Crumbs!" and gave up very easily. When shown the object assembly he said "I can't do jigsaws". On the Stanford-Binet he passed the first paper-cutting test (unlike Brenda), and reproduced the designs adequately. His first failure (apart from the Reading and Report item at Year X) was the Messenger Boy, after which he failed Five Digits Reversed and the plan of search. He passed the first two items of the Minkus Completion (which were read to him) at Year XII, passed memory for words at Year XIII, and passed memory for sentences at Average Adult 7. Thus although these results give no obvious evidence of constructional apraxia, it is worth noting that he was weakest at items involving orientation (e.g. plan of search, reversing digits) and strongest at items involving the use of abstract concepts (e.g. the Minkus Completion Test) and above all at items involving memory.

As regards reversals, however, his disability was very much more pronounced than Brenda's, as will be seen from the examples of his spelling given below.

Finally, with regard to failure at word-recognition, his performance was very similar to that of Brenda. His spelling, like hers, looks extremely curious at first glance, but can be seen on more detailed examination to be perfectly logical. His tendency to make reversals both in reading and writing was an extra handicap to him in addition to his difficulty over recognizing the words.

The following are samples of his spelling during routine testing at the clinic:

Mi deg cet his lug on an open ten
It is on a cat bot nat a deg
I sra har ran bie in the wet
sht cam to sec ro steal a bac net in the gar
the crul lacl cen

He read "for" as "of" and when given the word "quickly" started on the noise p.

The psychologist who originally tested Michael thought that absence from school and some learning inhibition due to emotional causes might be sufficient to account for Michael's weakness at reading and spelling; but there seems to the present writer

VOL. 2 1961

little evidence to substantiate this. His parents certainly showed some anxiety, but not a disproportionate amount in the circumstances. A psychiatric interview gave virtually a negative result in this respect, and in summarizing his findings the psychiatrist wrote: "I could find no good evidence of maladjustment of a kind that would warrant concern". There was no history of left-handedness or twinning in the family, but Michael's mother reported that she had once had treatment for a stammer.

Remedial teaching. A remedial teaching programme was started along lines similar to those adopted in the case of Brenda. Michael was gradually introduced to the different 'noises', and I invented sentences involving the noises which he had learned to date, but with no irregular words. Thus when he had learned that the same noise, i:, could be spelt either *ee* or *ea*, and that one simply had to know which words went *ee* and which went *ea*, I gave him the sentence: "He eats green peas for tea." Other sentences were: "He keeps the roads clean by sweeping them" "The man came from Spain" "He keeps his teeth clean".

More stress, however, was laid in Michael's case on reading as well as spelling. The usual reading books were used; these included in particular *Adventures in Reading* (Keir, 1949), and *The Happy Venture* readers (Schonell and Serjeant, 1956).

For the next 8 months Michael came to the clinic once per week, with occasional absences owing to illness or around Christmas and Easter. At the end of 8 months his reading age on the Schonell test had gone up to 7·1, an increase of 1·8 years, or one year nine and a half months.

After a spell at boarding school he returned for coaching about 8 months later. At this point I gave him the Schonell reading test yet again, and his score was 7·7. This was reasonably encouraging in that it suggested that, even without special coaching, his reading ability was at least holding its own, so to speak, with his chronological age. For the next few months he received fairly intensive coaching, usually for three periods a week instead of just one. Finally he went away to a different boarding school; and a year later his parents reported that, though still weak at spelling,* he could read perfectly well. This was at the age of 12:5.

The following are extracts from my notes during the first eight months of remedial teaching, Michael being aged 9·9 at the start and 10·5 at the finish.

Date	*Word*	*Read by him as*
Nov. 29th	on	no
	pot	top
	top	pot
	down	g—(pause)
	saw	was
	Ben	d—(pause)
Dec. 1st	saw	was
	quickly	p—p—(pause)
	dog	bog
	quickly	p—p—(pause)

(A further note on this date says "But he's improving".)

* A letter written to his parents just before their most recent half-term visit said that he would see them in "hav an oouer" ("half an hour").

Jan. 8th	been	den—done
	but	don't
	quickly	properly
	been	done
	because	der—dress—bess—best
	boys	boys—no dogs
	on	no
Feb. 5th	quite	started p—
	for	of
	was	saw

Feb. 12th "He has at last more or less grasped the word 'quickly'."

Feb. 26th "Not so many reversals."

Mar. 5th "More traces of 'look and say' and less dependence on making the noise."

April 30th "He read 'pulling' as 'qu-'. I called his attention to *p* and *q* and *b* and *d*, and got him to imitate their spatial direction with his hands. '*p* goes this way and *q* this way' he said, but in his first demonstration he did it the wrong way round! He shows some of the irritation of an aphasic."

During later sessions, when he was aged about 11, and I could get him to do long words such as 'discrimination', I found that in the case of four or five syllable words he could not even *say* them without orientational confusion. Thus he is reported in my notes as having been very much tied up over the words 'imagination' and 'conflagration'. Here, too, he showed the exasperation characteristic of the aphasic; he was clearly trying hard, but the word just would not come right!

Here, finally, are some extracts from his school books when he was aged between 10:6 and 11. At the time of writing he had had eight months special teaching at the clinic, and had recently gone to boarding-school. The 'key' to this spelling is given below, but readers may prefer to attempt their own deciphering first.

(1) Latitude is macad desdns N-S of the cwat. Aparl of latitude thit runs fow all the plas that aer at the same desdns macad N-S of the rcaudr.*

(2) Wen a saled sepedns lwscis ist on fom, and is adsorced in a lwecae, we ser the sopsts has *dsosovd* in the lwecwed. . . . Wen we dsolf a srpens in a lwecwed on tel the poent is ret wen the lwecwed well dsolf on mor, then we haf a *seturatec slwsn.*

(3) How things flot. A thing flots, if it can pas auva a naf lecwed, and not be cafad. Gafate and the lecwed pahing† the obsect up, helps‡ a thing to flot, becas the Gafate is paling the obsect dawn, and the lecwed is pasing it up.

(4) D sgib Surface Tension. Surface Tension is laec a sgen go the lecwed, bat the is not a sgen at all, it is jest Gafate and the pasing of the lecwed.

(5) Ien filings. Ien filings aer lecl peses of Ien, and we pat sam in§ the water, and sum of them boc fou the amajnae sgen and sam amand.

* A stroke appears to have been added afterwards to the d to turn it into a t.

† The *h* has been crossed out, but the letter in its place is illegible.

‡ Originally "halps".

§Originally "an".

VOL. 2 1961

(6) The negl. We pat a Negl in the water, fast we pat a pes of blating papa in the water, and pat the Negl on it and the papa sanɔ and the Negl acded an the Surface Tension.

Key

(1) Latitude is measured distance N-S of the equator. A parallel of latitude (is a line) that runs through all the places that are at the same distance measured N-S of the equator.

(2) When a solid substance loses its own form, and is absorbed in a liquid, we say the substance has *dissolved* in the liquid. . . . When we dissolve a substance in a liquid until the point is reached when the liquid will dissolve no more, then we have a *saturated solution.*

(3) How things float. A thing floats, if it can pass over enough liquid, and not be covered. Gravity and the liquid pushing the object up helps a thing to float, because gravity is pulling the object down, and the liquid is pushing it up.

(4) Describe Surface Tension. Surface Tension is like a skin on the liquid, but there is not a skin at all, it is just gravity and the pushing of the liquid.

(5) Iron filings. Iron filings are little pieces of iron, and we put some in the water, and some of them broke through the imaginary skin and some remained.

(6) The Needle. We put a needle in the water; first we put a piece of blotting paper in the water, and put the needle on it; and the paper sank and the needle acted on the Surface Tension.

Discussion of Michael's spelling. It may reasonably be inferred that Michael, like Brenda, was dependent in large measure on the tactile-kinaesthetic data arising for tongue and lip positions and movements.

There is the same difficulty over vowels. With the same scoring system as that adopted in Brenda's case we find the following result for his tests at the clinic (see p. 54).

	Correct	Incorrect	
Consonants	63	14	$\chi^2 = 6{\cdot}569$
Vowels	30	19	$P < 0{\cdot}02$

The 14 consonant errors are made up mostly of omissions in lines 4 and 5; in the first three lines the only mistake over a consonant is "sra" for "saw", i.e. 1 mistake in 37 consonants as compared with 11 mistakes out of 16 vowels.

Examination of the extracts from Michael's school books shows many of the same features that were found in Brenda's case, e.g. *c* for *s* in "macad" ("measured") and "pes" ("piece"), *sd* for *st* in "desdns", *f* for *v* in "dsolf" ("dissolve"), "cafad" ("covered"), and "gafate" (gravity"), and *d* for *t* in "acded" ("acted"). Other similar confusions are *s-g* for *s-c* or *s-k*, as in "d sgib" ("describe") and "sgen" ("skin"). In some cases the spelling corresponds to pronunciation at rather an infantile level, e.g. "negl" for "needle", and "lecl" for "little" (compare "lacl" in the earlier passage).

In addition there are reversals, e.g. "sanɔ" for "sank" and "on" for "no", and some misplacing of letters, e.g. "ist" for "its" and "sepedns" for "substance". The

words "Surface Tension" are so surprisingly correct that we may assume them to have been written on the blackboard.

Finally, his attempts at "liquid" seem to show a real struggle followed by a result with which he was presumably fairly well satisfied, viz. "lwecae", "lwecwed", "lecwed". The final result is in fact by far the nearest of the three to the actual sound of the word (I.P.A. script, "likwid") and represents the limits of what can be achieved by mouthing the word. It is difficult for those of us who can spell normally to realize what hard work it must have been for him to accomplish even this.

4. SOME THEORETICAL IMPLICATIONS

One of the main points which seems to me to be established by these and similar cases is that there is a specific disability *sui generis*, as opposed to an ordinary manifestation of dullness or stupidity. Macmeeken (1939) has shown that developmental aphasia can occur in children of high intelligence, and this finding receives further confirmation from the cases of both Brenda (I.Q. 116+) and Michael (I.Q. 128). Indeed it is more likely to be noticeable in children of high intelligence, since the discrepancy between their performance on the majority of tasks and their performance on tasks involving their specific disability is all the more marked.

VOL. 2 1961

What is of particular interest and difficulty is to indicate just what it is (or what is the main thing) which the developmental aphasic cannot do. There are, of course, the reversals of letters and words, and the tendency to become 'tied up' in saying long words (both very pronounced in Michael) and there is the constructional apraxia, which was very pronounced in Brenda. The main difficulty, however, which they both shared, was a special sort of failure in word-recognition. This failure resulted not only in poor reading ability but also in extreme difficulty in spelling, together with complete failure to recognize if their effort was right or wrong. I shall attempt in what follows to throw further light on the question of what this failure involves.

The concept of 'word-blindness'. Hinshelwood (1917) speaks of 'word-blindness'. This must presumably be taken as a metaphor, since the children are certainly not blind in the normal sense, as Hinshelwood himself agrees (p. 2). Any child who cannot recognize a word is to that extend 'blind' in a sense, but this tells us nothing. Indeed the term 'word-blindness' has been criticized (like the term 'dyslexia') for being an unnecessary and even misleading way of saying that the child cannot read —unnecessary because it adds nothing, and misleading because the word 'blindness' suggests a permanent and perhaps incurable state. Yet it is surely significant that Hinshelwood wanted to use the metaphor, and we may well ask if there is not something which the child cannot 'see' in *some* sense. What exactly is the connexion between this disability and vision?

Three suggested analogies. A possible analogy would be the following experiment. Suppose that the subject places his hand downwards on a table, and that the observer writes words on the back of it with a pencil. The object is then asked to 'read' by tactile-kinaesthetic cues what is written there.

The result of this experiment is what might be expected. The subject can *feel* something on his hand (just as the developmental aphasic can *see* something on the paper) but cannot without practice organize what he feels into a meaningful whole.

Now to speak of numbness or insensitivity here seems to be wrong in much the same way as it is wrong to describe the developmental aphasic as 'word-blind'; it is rather that the subject in this experiment cannot operate symbolically with tactile data just as the developmental aphasic cannot operate symbolically with visual data.

Another possible analogy would be with our failure to grasp sentences as meaningful wholes if the letters are simply read out in succession. Thus, without practice, it would not be easy to grasp the significance of the auditory stimuli which for purposes of this article may be visually represented as: *tee aitch ee see ay tee ess ay tee oh en tee aitch ee em ay tee*.

It should be noted that in both these two analogies the different parts of the stimulus are presented *successively*; there is therefore to that extent a difference from the visual word where, at least to normal people, the different parts of the stimulus are simultaneous. If these two analogies are valid we must say that the act of integration which normal people find difficult in the case of successive stimuli is difficult for the aphasic even in the case of vision.

The most satisfactory analogy, however, is, I think, that of the word which loses its meaning if we repeat it sufficiently often. This phenomenon is so familiar, and, to my mind, so important that it is surprising that such scant attention has been paid to it by psychologists. I have not so far attempted any systematic experimentation; but we can, I think, take it as a matter of common experience that if we repeat a word say ten or twenty times in immediate succession that word ceases to have any meaning for us. What happens here appears to be the converse of what happens in certain patients with acquired aphasia. Unable to produce, say, the word 'key' when presented with a key, they revert to circumlocutions, e.g. "You unlock doors with it"; here the word itself can be spoken at will, but it becomes simply a noise rather than a noise standing for the object which unlocks doors.

It seems, then, for the developmental aphasic, that the *visual* symbol fails to carry any meaning; it is as meaningless as the word 'key' when one has repeated it twenty times.

Macmeeken's description. Macmeeken (1939, p. 25) writes: "The suggestion arises . . . that for these children . . . no word exists to be recognized until the child has rendered his written symbol in terms of the spoken word". This seems to me a difficult but interesting statement of the problem. What is meant by saying that a word does or does not "exist to be recognized"? Perhaps the following points may clarify the position. When a normal person recognizes, say, the written word 'dog', we must suppose that this written word acts as a stimulus to 'touch off' one or more responses appropriate to dogs; these responses would be similar to those produced as a result of the auditory stimulus-word 'dog' and to those produced by the actual presence of a dog. In that case we could say that the word 'dog' exists to be recognized; a feeling of familiarity attaches to it at sight. In the case of these children there is no such feeling of familiarity, or at any rate such feeling of familiarity does not come easily. The appropriate responses are touched off only when the written symbol is converted into some other form, e.g. in terms of tongue and lip positions and movements or in terms of tactile-kinaesthetic memory ('tracing the word in the air'). As Macmeeken says, "Such effort is in many cases accompanied by exaggerated tongue and lip movements, movements of the head, facial grimaces, even by other body movements, say, of arm or leg". It seems as though the *visual* letters will not fuse into a word, but

that, at least in the case of intelligent children, they can be *mouthed* into forming a word. Similarly when a child is required to reproduce the word in writing, this is of particular difficulty since the 'feed-back' of combined visual letters does not convey meaning, as it does in the case of a normal reader, and the only way of obtaining 'feed-back' is to convert the individual letters into tongue and lip movements. In the case of Brenda this seems to have been precisely what was happening.

The objection may be raised that Brenda sometimes tried out the 'look' of words on rough paper; does not this suggest that after all she does have some visual memory for words? If my suggested view of the case is correct, it would seem to follow that the written word has no *symbolic* function for her; the letters d-o-g are a *thing*—a 'word-dog' one might say. One recognizes a 'word-dog' by its general shape, and once one knows the shape one can compare one's written word with it. The difficulty is that the shape of words of more than three letters is very complex; we should expect failure on any but the shortest words, and this is precisely what we find. The fact that a person tries out the 'look' of words is thus quite compatible with saying that the visual word is not functioning as a symbol.

VOL. 2 1961

The child is not therefore "render[ing] his written symbol in terms of the spoken word", as Macmeeken says; he is converting a non-symbolic mark on paper letter by letter into some other form in such a way that the end-product in its new form can function as a symbol. It is a laborious way of achieving what non-aphasic children can achieve much more easily.

Developmental aphasia and acquired aphasia. Something more should now be said to indicate the connexion between the performance of Brenda and Michael and the performance of those suffering from acquired aphasia.

Bastian, one of the early workers in this field, writes as follows: "Where the individual cannot read, I am inclined to think that this must be owing either to some lesion of the afferent fibres to the visual perceptive centre, of the visual perceptive centre itself, or of the communications between the cells of this centre and those of the auditory perceptive centre. If lesions existed in either of the first two situations, the visual impression could not receive its intellectual elaboration, and consequently it could not call up its associated sound (word) in the auditory centres, and hence no meaning would be conveyed by the hieroglyphic marks of the printed or written pages. They would be to the person mere meaningless strokes, just as we have assumed that if similar defects existed in the auditory perceptive centres, or in the afferent fibres with which they were connected, the individual could not appreciate the meaning of spoken words; these would be to him mere sounds." (Bastian, 1869, p. 484.) Bastian produced a diagram which included an 'auditory word centre', a 'visual word centre', a 'cheiro-kinaesthetic centre' (centre for the hand), and a 'glosso-kinaesthetic centre' (centre for the tongue); and the postulation of a break between the 'auditory word centre' and the 'visual word centre' would explain why, for the aphasic, 'glosso-kinaesthetic' data are necessary before a heard sound can be linked with a visual mark on paper. We may rightly regard Bastian's manner of explanation as somewhat naïve, but there seems no doubt that the phenomena which the diagram is intended to explain are similar to those found in the case of Brenda and Michael.*

* For a reproduction of Bastian's diagram, see Head (1926), p. 56.

A more recent parallel is that of a case cited by McFie, Piercy, and Zangwill (1950),* suffering from a fronto-parietal tumour. His plan of his house and his drawing of a bicycle were as follows (Figs. 5 and 6):

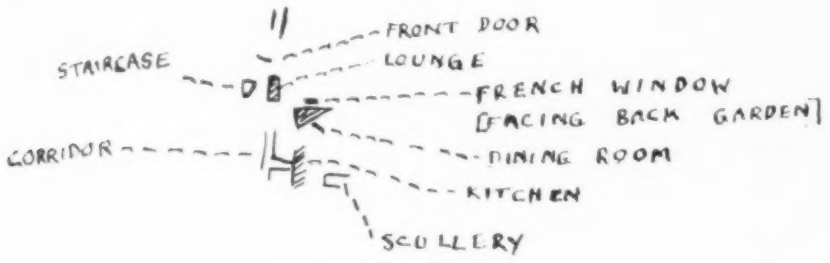

FIG. 5.

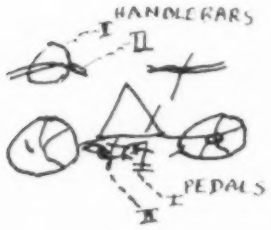

FIG. 6.

The similarity with Brenda's performance must surely be more than coincidence; and it seems not unreasonable to postulate in Brenda's case a failure of cortical development the effects of which were similar to the effects of the fronto-parietal tumour in the present case. I am not, of course, arguing for the presence of actual brain-*damage* in either Brenda or Michael; I am arguing only for a failure of development, and one which need not by any means be permanent.

The psycho-analytic approach. It has been suggested by Blanchard (1946) that in a certain proportion of cases, perhaps 20 per cent, reading disability is a symptom of an underlying neurotic anxiety. She does not dispute that there may be many cases where there is emotional disturbance *resulting from* the failure at reading, but her special concern is with those cases where the neurotic anxiety is itself a causal factor. In such cases it would seem that improvement at reading is difficult or impossible without adequate 'working through' of the unconscious phantasies which underlie the neurosis. Blanchard is in effect calling our attention to a problem of policy; she is suggesting that in some cases what is needed is therapy of a psycho-analytic kind rather than remedial teaching based on the hypothesis of incomplete cortical development. Following Blanchard I shall speak of this policy as 'the psycho-analytic approach'.†

* Case 3. See especially pp. 175 and 182.

† One way of formulating this approach is to say that we should look for 'psychological' causes rather than 'physical' ones. This terminology, however, is very much bound up with what we may call, following Professor Ryle (1949), the "ghost-in-the-machine" view of human personality; and it is most important to realize that, if we use therapy rather than remedial teaching, it does not follow that we are thereby treating the ghost rather than the machine!

In one of Blanchard's examples a boy is reported both as reversing letters and as combining them in odd ways. In explanation Blanchard calls attention to the view shared by most child analysts that words can be a means of displaying aggression. The behaviour in this particular case was indicative, according to Blanchard, of the boy's feelings towards his mother. The boy, we are told, was Jewish (on his father's side, presumably), whereas his mother was not. In the case of the reversals his purpose was aggressive, namely to attack her by writing in Hebrew; "he tried to turn the English taught at school into Hebrew by writing it backwards" (*op. cit.* p. 180). The other errors, in which he combined letters into what seemed nonsense, "were symbolic of the love he still felt for his mother". We are told, for instance, that he wrote "As ur mor" for "Ask your mother". The boy also did what he called "Chinese writing", which consisted of peculiar marks on paper. "His 'Chinese writing' was a magic spell that would cause his mother to be tortured with sharp knives" (*op. cit.* p. 181).

What is puzzling here is that both the reversals and the faulty spelling seem exactly comparable to those of Brenda and Michael as described in this paper. Unfortunately Blanchard does not give us details of whether and how the boy verbalized these alleged phantasies. If he did, one wonders if conceivably his remarks about writing in Hebrew could have arisen as an imaginative flight of fancy resulting from an *already existing* disability. In that case what happened was that the boy found himself, like other developmental aphasics, unable to spell, and then produced an *ex post facto* story to explain it.* We cannot tell on the evidence available. What is crucial is this. The symptoms are so similar to those of Brenda and Michael that there are very strong *prima facie* grounds for looking for the same explanation in all three cases.

VOL. 2 1961

If so, and if Blanchard's explanation is correct, it would follow that the weakness of both Brenda and Michael was due to some similar set of phantasies rather than primarily to failure of cortical development. Unfortunately it is very difficult in practice to distinguish between the two hypotheses, since the improvement in Blanchard's boy could have been due to development, and the improvement in Brenda and Michael could have been due to the therapeutic effects of remedial teaching. It is worth noting that in Brenda's case she is reported as being in rather an excitable mood and as "chaffing" her remedial teacher (see p. 56); and if the psychoanalytic approach to this type of disability is correct, it would follow that this incident, as part of a wider transference relationship, was of crucial importance.

My personal opinion is that in the case of both Brenda and Michael the psychoanalytic approach is misguided. This is perhaps a bold claim, since full-scale therapy was not attempted. But there was no *independent* evidence in either case of any gross psychiatric disturbance; and while one can always argue that fuller investigation might have revealed such a thing, such argument sounds suspiciously like saving one's hypothesis at all costs. Admittedly the argument is two-edged, since a person who says that the disability is due to failure of crtical function, and who, when no such failure is found, has recourse to the notion of 'undetected' failure, can plausibly

* With regard to the "Chinese writing", Blanchard unfortunately gives no examples. It would have been interesting to know if the "peculiar marks" which she describes were ever actual letters, and whether they could have been genuine attempts to spell.

be regarded as guilty of the same manoeuvre. But it should be remembered that in Brenda's case the symptoms were very similar to those of a patient *known* to be suffering from a fronto-parietal tumour (see p. 65); and unless one argues that this patient, too, had aggressive phantasies, one can save the psycho-analytic hypothesis in Brenda's case only by supposing that two highly similar sets of symptoms can none the less have two quite different explanations.

In general, of course, the influence of emotional factors, and in particular of the human relationships in remedial teaching, cannot in my opinion be too much stressed. The dynamics of the pupil-teacher relationship and its resultant effect on the dynamics of the family situation are factors which the educational psychologist ignores at his peril. As far as developmental aphasia is concerned, however, my personal opinion is that emotional maladjustment is not the main causal determinant.

Cross-laterality and twinning. The cases of Brenda and Michael establish only the negative point, viz. that developmental aphasia can occur in the absence of cross-laterality and in the absence of any history of twinning in the family.

Reversals and failure at word-recognition. If we take the essential features in the syndrome to be reversals and failure at word-recognition, the question arises as to how the two are related. This is a matter which seems to me very difficult, and what follows is put forward as speculation only. If it is correct that successive presentation of parts of a word (e.g. the auditory presentation of the noises *see ay tee*, see earlier) makes integration more difficult than if the parts of the word are given simultaneously as in vision, can it be that something analogous to successive presentation occurs in the case of developmental aphasics even when the visual word is involved? I am not of course suggesting that there is any failure of integration when *things* lie side by side, but only when *symbols* lie side by side. It seems to me not impossible that the visual perception of symbols should be disordered temporally as well as spatially,* and this would create in the case of vision the same problems of integration as the rest of us have in the case of the 'successive' senses of hearing and touch. It is because of a failure of temporary integration that the visual word seems unfamiliar, and it is because vision is involved that one is tempted to speak of 'word-*blindness*'. The connection with vision, however, is a *de facto* one, arising because visual symbols for normal people, unlike auditory or tactual ones, allow integration to be made with all the parts present simultaneously. The result of spatial and temporal disorientation is to affect vision rather than the other senses.

If this is correct, then the essential feature in the syndrome is this disorientation, or 'directional confusion' as Macmeeken calls it. This would account not only for the reversals and constructional apraxia, but also for the failure at word-recognition. The main features of the syndrome can in that case be brought under the same explanatory principle. I would emphasize once again, however, that the theorizing in the last two paragraphs is provisional and speculative.

* There are many interesting analogies between spatial and temporal awareness (see especially Kant (1781), *Transcendental Aesthetic*), and it is therefore not unreasonable to suppose that the same cortical failure can affect both.

5. SOME PRACTICAL IMPLICATIONS

If the main ideas expressed in this paper are correct, it follows that this type of disability is entirely beyond the child's control. This has important practical consequences for the handling of such cases. Both Brenda and Michael were able to appreciate and accept the fact that, for them personally, certain tasks were more difficult than for some of their contemporaries. For most of the time during the remedial teaching sessions they were prepared to make an effort; in special circumstances, e.g. when Brenda had a cold (see earlier), making the effort was more difficult. A knowledge of these limitations enabled me to see how much could reasonably be expected of them at any particular time. There were times with Michael when I made clear that the required piece of reading or spelling was something within his power provided he was careful and followed the rules that I had given him. If he failed to be careful, I made clear that I expected him to do better; but where words were irregular or the rules which I had given him did not operate, there was no question of my finding fault with him or even expressing disappointment. What was necessary for me was to know when to say "This is difficult; have a shot" and when to make clear that a particular task was within his power. If a child of this kind likes to be told whether he has 'done well' or 'done badly', all that the teacher need do, to give an honest answer, is to adjust his standards of what constitutes 'doing well' or 'doing badly' in a special way on the basis of what a developmental aphasic can be *expected* to do.

VOL. 2 1961

A further point is this. On the assumption that developmental aphasia is a disability *sui generis*, it follows that figures obtained from many of the standard intelligence tests are liable to be under-estimations of the child's potential. The Revised Stanford-Binet test, for instance, taps many abilities (this is one of the fascinating things about its use in practice), and includes items which the developmental aphasic is likely to find difficult. Thus such a child would be expected to score highly on the reasoning and memory items but not on the copying of diagrams or the paper-cutting tests. To take simply the sum of the child's scores on individual test-items and hope to obtain a meaningful figure seems to me unimaginative and misguided; the result may be no more than an indication of how far the test in question is saturated with items that the developmental aphasic finds difficult. These tests have their value as a standardized form of interview; but in the case of the developmental aphasic caution is needed.

With regard to the frequency of this type of disability it is difficult to conjecture. A large-scale survey, involving detailed examination of all children whose reading ages were less than, say, 85 per cent of their I.Q., would be a necessary preliminary; and even then, since developmental aphasia may well not be an 'all-or-none' phenomenon at all, a more or less arbitrary demarcation line might have to be drawn. In addition it should be remembered that among duller children the condition is more likely to pass unnoticed, since the discrepancy between reading ability and general brightness would be much less marked.

Finally, although I have suggested that the reason for developmental aphasia will ultimately be found to lie in cortical failure of function, it by no means follows that this failure of function will be permanent. Comparisons of the brain to an elaborate telephone system are no doubt informative in some respects, but it should

be remembered that the brain is in many ways altogether *unlike* a telephone system. If a telephone wire is broken, communication to a particular house is impossible, and there is no more to be said. The brain, on the other hand, is a very plastic organ, and even when there is definite damage to a particular area, as in acquired aphasia, another area can partially take over certain functions. In the case of developmental aphasia, where there is not so much damage as some failure of development, there is *a fortiori* every prospect of fresh skills emerging. Individual attention is necessary for these children, and helping them to overcome their disability may be a lengthy and even painful process, but it seems from the data available that there is good chance of successful progress.

6. SUMMARY

The concept of 'developmental aphasia' was introduced and discussed. Case-histories were reported of two children who displayed this syndrome to a marked degree, and samples of their spelling were analysed. Some theoretical and practical implications of the findings were then examined.

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ROCKING AT NIGHT

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VOL. 2 1961

INTRODUCTION

A SEVENTEEN-YEAR-OLD boy was admitted to the Adolescent Unit of the Bethlem Royal Hospital for assessment of his employability on leaving school. His disability consisted of bizarre movements which had recurred every night since infancy, preventing him from having adequate sleep. The movements were considered by several neurologists to be of organic origin although they were unable to explain the nature of the lesion or the precise type of disturbance. Their opinion was supported by the fact that the boy did have a physical abnormality, although it was not neurological in type.

After many attempts to understand the patient's abnormality in organic terms the author decided that the movements were of psychogenic origin and that his organic disturbance was unrelated. This resulted in a more fruitful approach and the author was able to put together aspects which had been puzzling and apparently disconnected. It led to the realization that the patient did not have a unique syndrome, but was a case of rocking at night, which was unusually severe and had persisted for an unusually long period. The literature which deals with rocking at night supported this opinion.

No adequate explanations for rocking at night exist. Recent developments in other branches of psychiatry have led the author to new etiological explanations, and these are presented at the end of the paper.

CASE HISTORY

The family

Father, aged 41, was an Estate Agent—an intelligent man with ambition and drive, who was very fond of the patient but underestimated his son's capabilities. He asked for admission in order to get an assessment of his employability on leaving school, wanting to know how his talents could be best used.

Mother was also aged 41—a petite woman 4 ft 11½ in. high. She was a highly intelligent informant. Towards her children she was warm and maternal. Towards the patient she was a little over-protective, trying to give him security although not restricting him.

His father and paternal grandmother were unable to extend fully the proximal interphalangeal joints of the fifth fingers. On the maternal side, a great-grandmother

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was only 4 ft 6 in. high, and a cousin had torticollis at the age of 20 and committed suicide. The siblings comprised a sister aged 12, and a brother aged 9. The latter was enuretic until the age of 8. There was no relevant family history of hereditary disease and nothing suggestive of neurofibromatosis.

Patient's previous history

The personal history reveals that the patient was born after an uneventful pregnancy—delivery by forceps after a 15-hr labour. He cried lustily soon after birth and fed well from the first day. As a baby he slept well, and mother does not recall sleepless nights. The only abnormality that she noticed as a baby was excessive perspiration on occasions. His early development was normal: he sat up at 9 months, walked at 14 months, spoke at an early age, and was reading at 4:6. He was quite a happy child, and although obedient, he had initiative and a normal amount of curiosity. He attended school from the age of 5 years. At the age of 7:7, he was referred to an Educational Psychologist who reported an I.Q. of 119 on the Terman Merrill, a Reading Age of 9 years 4 months, and an Arithmetic Age of 7 years, concluding that, "This child is of a very nervous temperament. He is seriously retarded in Arithmetic and his retardation has brought about a dislike of the subject, which, coupled with his constitutional nervousness, probably accounts for his fear of school which appears to be the main cause of his insomnia."

As a result of this, he went to an Open Air School for 2 years, and again at the age of 13 for a further 2 years. Because of his immaturity and nervousness he remained at a Secondary Modern School until his admission at the age of 17 years.

At this stage his headmaster reported that he was 2 years behind his age group and was friendly with those 2-3 years younger than himself. There was little capacity to concentrate and overcome difficulties and he tended to dodge them. Manual control was poor and this affected his handwriting and precise manual work.

Childhood illnesses consisted of chicken pox at 15 months, measles at 17 months, whooping cough at 18 months and pneumonia at 3 years. There was no history suggestive of encephalitis.

His personality was that of a youth who mixed well and had a number of friends. Main interests were cricket—(he was a fast accurate bowler)—swimming, table tennis, walking, cycling and reading, and he was extremely fond of animals. He had a normal amount of energy, especially if enjoying himself. He was happy, with quite a sense of humour. If frustrated, he became very tense, and restlessness would appear, but he rarely cried or exhibited temper. There was little interest in girls. He masturbated occasionally.

History of present illness

In Spring 1944, when the patient was about 2 : 3 old, mother went to him in his bedroom one night because of a violent thunderstorm and noticed that he was restless. A paediatrician examined him and reassured the mother that he was normal. However, his restlessness recurred every night, and even at this age would last several hours. Following pneumonia at the age of 3, when his movements ceased temporarily, his condition became worse by night, and he was also restless at times during the day, especially when tired. On occasions he would be restless the whole night, and

on one occasion did not sleep for 48 hr. Sleeping with his mother made no difference. Frequency of urine occurred as he settled to sleep and he would micturate as many as 12 times before going to sleep. Occasionally he was enuretic.

Prior to admission his movements had become more bizarre, and mother had found him sometimes standing on his head, propped against the wall, continuing his movements. Once she found him standing on his head in a chair, apparently fast asleep.

The patient himself complained of insomnia only, and he was not perturbed by his nocturnal restlessness although he was aware of it. He was concerned about his mild daytime restlessness only because it embarrassed him in company. In such situations he could not voluntarily keep still, although in enjoyable activities such as playing commandos, he could lie motionless in wait for the enemy for 10 or more minutes. His movements were unchanged after masturbation.

Physical examination. The most obvious abnormality was his dwarfism, his height being 4 ft 8 in: weight 5 stone 9 lbs. He was well-proportioned, and upper and lower halves of his body were in correct ratio. Sexual maturation had begun during the last 2 years—he was still pubertal with well-developed genitalia, but no axillary or facial hair.

VOL. 2 1961

His facial appearance was not infantile, and his nose, chin and ears were well-developed.

There were other abnormal findings. His palate showed inversion of its curvature anteriorly. He was unable to flex the proximal interphalangeal joints of the fifth fingers. There was a scoliosis, concave to the left. An enlarged spleen descended two finger-breadths below the costal margin. Some lymph glands were just palpable.

There were no pigmented areas, nodules or phakomata to suggest Von Recklinghausen's neurofibromatosis. Neither was there evidence of lipoidosis.

Neurological examination revealed no abnormality other than restlessness. Similar findings were noted when he was 10 and 16 years old. His handwriting was good, and he could play cricket, billiards and table-tennis well. During the daytime his restlessness was not present until he became anxious, as during psychological testing, X-ray or electroencephalography. He then began to rub or scratch his arms, and move his shoulders or his head at irregular intervals as if discharging nervous tension.

The maximum disturbance occurred on going to sleep. Restlessness began while settling down, e.g. when reading a book. He would typically move his shoulders or head, and rub his nose or his arms. While going to sleep this restlessness increased rapidly in degree, rate and duration and an intermittent rhythmical rocking would develop. During the peak of his restlessness, one 40-min period of observation recorded 36 bursts of activity, lasting an average of 60 sec with an average rest of only 4 sec. Head and shoulder movements occurred at a rate of 70–100 per min. He would rock from one side to another, or fling his head backwards and forwards with a violence sufficient to cause bruising if he hit anything hard. As a result protection from injury was required. Alternatively he might flex and extend his trunk and head, or rotate his trunk from side to side during his bursts of activity. This might happen when he was sitting up. Sometimes he would rock violently half way out of bed as if he were surely going to fall, but he would try to prevent this even in apparent sleep by gripping the edge of the bed. Sometimes this was successful. At other times he would

slide out of bed keeping his legs in bed with his shoulders resting on the floor and his head under the bed. Movements would continue despite this precarious positioning and eventually he would fall on to the floor. There he might stay rocking, though less vigorously, or he would climb back into bed and start all over again. Surprisingly, the rapidity and violence of his movements did not appear to produce exhaustion. He sweated profusely, but this seemed more closely linked to tension than to the physical exertion. At an early stage of his rocking he would respond to being called, or spontaneously notice an observer and speak to him, but at a later stage he appeared to be asleep. He was awake, however, insofar as he would be on the edge of the bed for long periods yet prevent himself from falling. This pattern recurred if he woke at night. On occasions he would go to the toilet to pass urine without really waking. He did not have at these times a recurrence of his restlessness on returning to bed nor in the mornings on waking.

Observed during the night, 108 times in all, he was restless throughout the night on 26 occasions, but he complained of having had no sleep on only two of these nights. The other nights he had an average of over two hours' restlessness. Sedatives were found to diminish the duration of restlessness but had no other effect.

Mental examination. On admission he was very timid and apprehensive, but settled down and soon mixed with the other boys. Quiet and usually co-operative, he was very happy in the ward. While he wished his insomnia to improve, he said he had learned to "accept it" and, apart from occasional blasphemy when going to sleep, he never complained. Psychotherapeutic investigation was difficult and unrewarding for he always talked away from his problems and was unco-operative in these matters.

His interests in general were those of a 13-year-old boy.

Special investigations

Investigation of endocrine function revealed no abnormality of haemoglobin, blood cholesterol, plasma-bound iodine, thyrotropic stimulating hormone, 17 ketosteroids, alcohol stable fractionated steroids, serum calcium and phosphate, alkaline phosphatase or the pituitary fossa. Liver function tests, urine, uric acid, blood urea, blood sugar estimations during restless periods at night, W.R. & Kahn and cerebro-spinal fluid were normal. The bone age was 14 years.

The Brucellosis test was positive. X-rays were abnormal and revealed a thoracic scoliosis, a cervical rib, thoracic hemivertebrae and cervical spina bifida. There was a posterior mediastinal tumour of at least 7 years duration which experts believed to be more likely a neurofibroma than anything else. Three electroencephalograms were recorded, the second taken during pentothal-induced sleep showed long runs of bilaterally symmetrical discharges of an unusual type but possibly related to the normal arousal responses. No definite evidence to support cerebral abnormality was found. Anoxia produced by low oxygen high nitrogen mixture, produced no movements, only cyanosis.

The Wechsler-Bellevue Test gave a verbal I.Q. of 94 and a performance I.Q. of 67. Further testing with the Goldstein-Scheerer Sorting test (1941), the Trail-making Test (Armitage 1946) and the Bender-Gestalt Test (1943) did not indicate brain damage.

Investigation of his sleep disturbance showed that he sweated profusely at the onset. The pulse rate increased with his exertions, but muscle tone and reflex activity assessed clinically did not alter until he was deeply asleep when they were diminished. His psycho-galvanic reflex indicated that when accustomed to the test he was quite relaxed on going to bed, but with the approach of sleep showed a marked increase of nervous tension which preceded the movements by minutes. When sleep was deep, the psycho-galvanic reflex showed the usual reduction of nervous tension.

Treatment and progress

The patient had been treated in the past with Artane, Bromides and Barbiturates. Following admission large doses of Sodium Amytal, Seconal, Hexobarbitone, Largactil, Reserpine, Phenytoin, Myanesin and Amphetamine were tried with little benefit. Attempts at hypnosis and muscle relaxation were fruitless. He responded to intravenous barbiturates by going into a deep restful sleep. In view of this, an attempt was made to condition him to sleep using a metronome and intravenous Sodium Amytal. He slept each night by this method without restlessness. It was hoped that he would eventually sleep conditioned by the metronome and a minimum of sedation, but after 14 nights this was abandoned for he began to respond as patients in anxiety states do, by requiring larger doses.

VOL. 2 1961

As conditioning to a metronome failed, the case was approached from another angle. It was considered that the patient had acquired a pattern of behaviour while going to sleep: this behaviour, his rocking, was assumed to be automatic by now, a form of conditioned reflex preventing sleep. An attempt was made to extinguish this behaviour by making the patient repeat, as closely as possible, non-stop, the nocturnal movements for 1 hr three times a day. It was hoped that this would result in exhaustion and inhibition of the pattern and subsequent disappearance of the movements at night. Neither of these aims was achieved nor was the patient exhausted—a point which will be commented upon later.

Following these efforts he was sent home. One year later his movements still persisted.

Diagnosis

This boy presented a puzzling collection of symptoms. At first, attempts were made to put the various manifestations in one diagnostic category but after considerable thought and perusal of the literature it was felt that by dividing them into physical and psychiatric features, the case could be understood more easily and a more accurate diagnosis made.

The physical features could be grouped into three categories which may or may not be related to one another. The most striking was his dwarfism and physical immaturity which made him look like a 13-year-old boy. In accordance with this was his size, weight, bone age and delayed puberty. His delayed emotional development was in agreement.

While it could be that his dwarfism was in response to his nocturnal restlessness, it seems unlikely. Underdevelopment of limbs is associated with paralysis, not with excessive use.

The second group of physical signs were the skeletal abnormalities, viz. hemivertebrae, thoracic scoliosis, cervical rib, cervical spina bifida with palatal and digital abnormalities. The posterior mediastinal mass of 7+ years duration was probably related.

The third group of signs—adenitis and mild splenomegaly—was due to chronic latent brucellosis.

The psychiatric symptoms consist of almost life-long nervousness including difficulty with school work from before the age of 7, complaints of insomnia, marked intolerance of test situations with production of restlessness and sweating. His markedly increased muscle tension on physical examination, his marked increase of nervous tension as measured by the P.G.R. on going to sleep plus his inability to persist in his aims when he has difficulties (plus one's clinical impression), all indicate a low threshold to psychogenic stress.

The problem was how to link up his groups of features with the principal complaint of restlessness and rocking at night.

At first it was thought that the restlessness had a neurological basis. It seemed possible that the movements might be related to one of the extrapyramidal syndromes, although the periodical repetitive rhythmic components, easily stopped by waking, are not a feature of these syndromes.

Neurologists—Ford (1960), Brain (1955), Wilson (1954), Denny-Brown (1946), etc.—do not mention the occurrence of extrapyramidal syndromes occurring at night but absent during the daytime. Neurologists who saw the patient's movements had never seen anything similar.

Encephalitis is well known for its bizarre features but the patient did not have anything other than his movements to support this diagnosis.

An attempt to link up his condition with chronic Brucellosis did not clarify the picture. Dalrymple-Champneys (1950, 1960) and Nelson-Jones (1951) describe neurological phenomena in that disease, but they fall into clearly defined categories and were in no way similar to our case. Furthermore, the patient's movements failed to respond when the brucellosis was treated.

There are difficulties in ascribing to this boy a neurological disease, for the symptoms are difficult to describe in terms of neurological dysfunction.

The lipoidoses do not present such syndromes (Thannhauser, 1950). In view of the mediastinal mass, the skeletal abnormalities and the dwarfism, an attempt was made to link up his movements with multiple neurofibromatosis, but it was not successful (Holt and Wright, 1948; McCarroll, 1950; Pendergrass *et al.*, 1956; Nassim, 1958; Allibone *et al.*, 1960).

Fibrous dysplasia of bones (Pritchard, 1951) appears unrelated.

Similar efforts to link up the movements with dwarfism did not seem to have a rational basis. Authorities such as Wilkins (1957) and Williams (1955) do not mention a case of this type.

Rare syndromes such as those described by Wagner (1956), Beardmore and Wigglesworth (1958), Bean (1955) and Roberts (1958) do not cover such a case.

After much thought the author decided that all the various aspects of the case, especially the patient's movements, could not collectively be placed under an organic heading. No satisfactory meaning or cause for the restlessness and rocking could be

found with this approach. An organic aetiology could not account for the patient's indifference to his rocking as opposed to his concern about insomnia. The many features of anxiety had to be ignored or explained away as a reaction to his movements, although he did not complain of these, but only of insomnia. The increased sweating and frequency of micturition on going to sleep, or why he fell asleep so rapidly after a pillow-fight or hard physical work, could not be easily explained in organic terms.

A suggestion that restlessness at night was due to release of higher inhibitory centres was contradicted by evidence that anxiety in the daytime also produced mild restlessness. The possibility that sleep caused anoxia which produced movements, was disposed of by the absence of movements when he was rendered anoxic artificially.

At first it was difficult to link the diurnal restlessness, accompanying increased nervous tension, and the restlessness and rocking on going to sleep. For Kosuge (1936), Kleitman (1939), Farmer and Chambers (1924), Wang (1957) have shown by means of the P.G.R. and other means that going to sleep is accompanied by reduction of nervous tension, not an increase. It was only when it was found that the patient showed a marked increase of nervous tension on going to sleep (as indicated by the psycho-galvanometer and the clinical impression) which preceded his restlessness and rocking, that the apparent paradoxical situations producing restlessness, namely, when anxious, and when going to sleep, were clarified.

VOL. 2 1961

The following formulation was then made. The patient showed increased, not diminished, tension on going to sleep. This was because he was expecting sleeplessness, which produced restlessness as a result. This restlessness, a consequence of his anxiety, delayed sleep, thus making him more anxious and creating a vicious circle. He attempted to remove the anxiety by rocking. It is noteworthy that intravenous barbiturates, in whose efficacy he had implicit trust, always allowed him to go to sleep rapidly with minimum restlessness and no rocking.

With this explanation his complaint of insomnia and not of restlessness becomes understandable. The restlessness is not the basic disturbance, although so alarming to watch. His sweating and urinary frequency is a result of his anxiety over his insomnia. A close parallel is seen in the anxious expectant father who is chain-smoking. He will talk about his anxiety but is unconcerned about his chain-smoking, for it is a method of relieving his anxiety. Similarly the patient talked of his insomnia and not of his movements. It was decided that this boy was a case of what has been described as nocturnal restlessness, nocturnal rocking, *rythmie du sommeil* or *jactatio capitis nocturna*.

Before proceeding further in the analysis of this case we will look at the literature.

Review of literature

Nocturnal restlessness, or rocking, severe enough to merit medical investigation appears to be a rare occurrence. Nevertheless, its presence in this country can be illustrated by the following:

A letter appeared in *Woman*—a popular weekly magazine—from a young woman who still rocked her head when she was going to sleep. As a result of this publication the editors had several letters from women with the same symptoms from all over the country.

On the other hand, there seem to be no articles in English dealing with this

complaint—except in a cursory fashion—other than those of Fitzherbert (1950, 1952). For this reason it is felt that a review of the literature is overdue.

The major papers written on this subject are by René Cruchet (1905, 1906, 1907, 1912, 1928), who believed that the first case reported was by Wepfer in 1727, who described a case of head movements which lasted throughout the night. For practical purposes the first cases to be described were by Putman Jacobi (1880) and by Rossi (quoted by Galvagni, 1880). The former described a 3-year-old child, while the latter quoted several cases.

Oppenheim (1902) described two cases but a far more important description was made by Zappert in 1905 who presented 6 children and called the syndrome *jactatio capitis nocturna*. Independently Cruchet described cases in 1905, 1906, 1907, 1912 and 1928, which he called *rythmie du sommeil*. In *Les Torticollis Spasmodiques* he published details of all the cases he had seen or had been recorded in the literature up to that time.

Dereure (1906), Pieron (1913), Hamburger (1915), Masci (1917), Bertroye (1927), Gillespie (1929) and Roget (1932) have all given descriptions. Roget distinguished the syndrome from *agitation motrice*, a condition in which children are restless throughout the night in a disorderly way and talk in their sleep.

Kleitman (1939), Lourie (1949), Cremieux (1950), Schacter (1950, 1954, 1955), have also given descriptions of the syndrome. One can summarize these papers by saying that the syndrome is characterized by a rhythmical movement of the body, which always involves the head and may involve the trunk or the limbs. The movements may be regular or in intermittent bursts of activity, and occur either at the onset of sleep or during apparent sleep. They may appear to be voluntary and pleasurable, insofar as the patient does not complain of them and is resentful if interrupted. At times the movements are vigorous and prolonged without apparently causing exhaustion, but injury may result. The rocking may be accompanied by humming noises. The movements are affected by the position of the body, external noises and interference. The child has little memory of the behaviour the following morning.

Some cases have tics in the daytime and may have diurnal rocking rhythmical movements. While some are reported to be intellectually retarded, these are in the minority. On the other hand, most have symptoms indicative of behavioural disorders. The subjects do not complain of tiredness on waking. Most of the cases recorded have rocked since the age of 5–12 months, but occasionally it arises later. The symptoms may persist until adult life, but Roger (1932) states that most cases cease rocking by the age of 2–3 years; only a minority persist. Lourie (1949 *a*, *b*) records cases who have returned, years later, to this pattern when under severe stress.

Aetiological theories

No recent review of theories of the aetiology exists, so perhaps itis worth while to summarize those that have been put forward.

Organic theories have never had a whole-hearted proponent—even those who found some such evidence have suggested an additional psychogenic factor.

Putman-Jacobi (1880) considered her case to be due possibly to a cerebellar

lesion or a disturbance of the brain stem, and finally suggested a neurosis of the epileptic type. Her speculations are not valid in the light of present knowledge.

Galvagni (1880) published Rossi's cases and divided them into three groups of disturbances, namely, those occurring on going to sleep, those present on going to sleep and during sleep, and those which occurred during sleep only. While this classification is neat, in actual practice it is very difficult to decide when sleep has occurred in a child who continues to rock. Although this classification was used by Cruchet it has not been of much value aetiologically. Rossi found two families and Zappert (1905) one family in which several members, including the mother, were affected. This does suggest some hereditary predisposition, to say the least, but Rossi found that the two families lived in flats one above the other, and considered that some imitation of the audible rocking noises might have taken place. Galvagni considered the movements in terms of muscle disorders.

Oppenheim (1902) considered his cases to be a variety of *spasmus nutans*, which he thought might have psychogenic components.

Cruchet initially regarded his cases as examples of tics. In his detailed survey of 35 cases in 1907 he showed that symptoms persisted up to the age of 3–60 years, although 25 of the cases described had been under the age of 11. Sex seemed to play no obvious role, for 19 were male and 16 female. He found almost half the patients to be intelligent, while few were actually defective. While some cases were nervous others were not.

Roger (1932) speculated about encephalitis playing a role and Pieron (1913) grouped them with chorea, but neither presented supporting evidence.

More recently Schachter (1950, 1952, 1954), has had a series of 40 cases. He found that 13 had an abnormal E.E.G., 45 per cent of the children were mentally retarded, and 32·5 per cent had signs or a history suggestive of brain injury. Some of his cases had *salaam* spasms although he considers that this was a different entity from rocking. In spite of these findings he considers that the rocking is a sort of "physiological necessity" to calm the child. He found behaviour disorders in 80 per cent and thought many of these had over-anxious parents. In his opinion the syndrome is basically psychogenically determined.

Schachter's high incidence of mental retardation differs from the majority of reports. It is not permissible nowadays to group cases of mental retardation under one etiological banner without further clarification, and one must consider whether the factors causing the defect lie in heredity, a genetic variation, brain injury, adverse environment and such-like before coming to conclusions. Unfortunately, Schachter has not proceeded with this analysis. Consideration of the rhythms in terms of perseveration resulting from organic dysfunction is not rewarding, insofar as only the minority of cases reported have had signs of brain damage, neither was there mention of perseveration in other activities. Approaching this from another angle: do defectives have nocturnal rocking movements during sleep? One can say that it is so rare that authorities such as Penrose (1954), Tredgold (1956), O'Connor and Tizard (1956), Clarke and Clarke (1958), Hilliard and Kirman (1957), Masland, Sarason Gladwin (1959) do not mention a case. The diurnal rocking movements that defectives do have, often appear to be due to the absence of pleasing environmental stimuli, for they can be diminished by occupying the patient.

VOL. 2 1961

Many cases such as the author's do appear to have ill-health, but the diversity of causes makes its relationship to the rocking appear to be obscure, except perhaps to predispose to rocking as a form of auto-erotic activity, as the patients cannot manipulate their external environment so well, and get as much satisfaction from it, as if they were in good health.

When one turns to the psychological aspects of rocking, there are many more speculations about the aetiology. Galvagni (1880) had cases who admitted they rocked in order to sleep. Two women stopped when they married, but would resort to the movements if they had difficulty in going to sleep.

Oppenheim (1902) felt that psychogenic factors which he did not name played a part. Many authors, for example, Zappert (1905), Bertroye (1927) and Hamburger (1915), have shown that admission to hospital, and thereby separation from parents, will produce a temporary improvement. Zappert felt that the movements were stereotypies and allied them to "bad habits", like biting and hair-pulling. He felt they were not tics. Masci (1917) after thoughtful discussion, in which he started by discussing the abnormality in terms of abnormal muscle function, also decided that the movements were due to faulty habits. As his case, a soldier, had been exposed to prolonged enemy attack prior to admission to hospital, Masci felt that his nocturnal disturbance may have had an emotional origin, together with a predisposition to react in this way to stress.

Cruchet (1907, 1928) had many interesting ideas. He felt that some children may rock themselves to sleep because they were rocked to sleep as babies. Later on the children imitated the rocking movements to send themselves to sleep. He speculated about the similarity between the movements and those of snoring. He suggested that like snoring it often came on when sleep was deep; the patients had no memory of it, and both groups were resentful if woken up. I think, however, that the rocking is too active a procedure to link up with snoring, which is due to passive vibration of the posterior faucial walls (Robin, 1948). Cruchet noted, as did Galvagni, Zappert and de Lange (1905), and as occurred in the author's case, that the subjects found the movements agreeable and were quite resentful when disturbed.

There is no reference in all the cases that the author has read that the children complained of their movements. One may say that in at least some cases the movements produced considerable pleasure which could be truly called auto-erotic satisfaction. To go beyond this and call it a masturbatory equivalent in all cases is unjustified. As the author's case sometimes masturbated successfully before he started rocking, and as erections were not a feature of his movements, there seems to have been little connection in his case.

Lourie (1949) and Fitzherbert (1950, 1952) mentioned the possibility, tentatively, that the child may bang his head and rock because as a foetus it heard the maternal aorta, and is attempting to repeat these auditory experiences. Fitzherbert has given careful thought to the subject of rocking, and has commented on how the child is usually held and nursed in the mother's left arm and fed with the right. This means that its head is close to the mother's heart. The child may be rocking to reproduce the rhythmic auditory sensations produced when held by the mother, with the care and security associated with this. She states that in one case a mother was examined as a result of this hypothesis and was found to have unsuspected heart

disease with exaggerated heart sounds. Fitzherbert and Galvagni and Cruchet also suggested that weaning may produce stress. It is about this time that most infants develop rocking. It has been suggested that violent movements may indicate aggressive phantasies towards the mother. At this stage it is worth referring to Kubie (1941) and his paper on the repetitive core of neurosis. He describes what happens in a child when a state of conflict is set up as a result of an unsatisfied need and the conflict can no longer be adequately discharged. He says that in certain circumstances nothing can occur except the repetition of substitutive ways of asking for the same thing. "The repetition of one act thus becomes to the child the only safe and permissible expression of several things at once; original yearning; anger at its frustration; guilt for both the yearning and the rage; fear both of retaliation and of its own deep resentments. It becomes the only possible compromise expression of all that the child feels; and because it draws its energies from every available source and expresses every conflicting tension, it becomes irresistible to the child and uncontrollable by its parents and educators."

It might well be that rocking contains all these elements. The conflicting aspects of this repetition would explain why rocking was not such a successful means of producing sleep.

VOL. 2 1961

Lourie (1949*a*) has shown that half his children who rocked, either on going to sleep or during sleep, stopped when a metronome set at the same rhythm as the rocking movements was started. In some cases the movements returned when the metronome was stopped.

Brody (1960) points out that many rock only when the mother is absent. She offers the hypothesis that repetitious and agitated self-rocking is aimed to re-establish bodily contact with the mother, an auto-erotic substitute for satisfactions originally provided by her.

Discussion

What has been said so far explains some aspects of the behaviour but it is unlikely that any specific theory will explain all.

Can we regard rocking as a means of obtaining comfort, of relieving anxiety, to help go to sleep or to maintain sleep? To implicate anxiety when it is not apparent is difficult, but a pointer to this is the displeasure that occurs when patients are interrupted in their activities. More impressive is the evidence in our patient that nervous tension increased before sleep, as indicated by the psychogalvanic reflex and clinical impression, and that rocking followed.

The patient had a low threshold to stress, and going to sleep caused anxiety, for he expected insomnia. To relieve himself of anxiety and his consequent restlessness, and to help him go to sleep, he rocked. After many months' investigation, to the query: "Why do you rock?" he replied, "Perhaps it helps me to sleep". Some of Galvagni's patients admitted they rocked for this reason. A 5-year-old told the author that he rocked violently because he liked it, adding that it stopped him being afraid of the dark. His fear of the dark appeared to be a secondary reason. Another 5-year old rocked violently because it made him dizzy.

Rocking might therefore occur during sleep, just as someone dreams or talks or walks in his sleep, as a means of dealing with anxiety. There is no valid reason why

rocking before sleep and during sleep should be regarded as other than variants of one syndrome. One produces sleep, the other preserves sleep.

At this stage we can analyse the movements in greater detail. All cases show head movements from side to side or backwards and forwards. The movements of the rest of the body are secondary and can be regarded as a spread of activity. The neck muscles involved are quite powerful and not easily tired. In the child they are relatively stronger than in the adult, and are sufficiently developed by the third to eighth month to lift the child's head, which is a larger proportion of the body-weight than in the adult. If head-rolling is involved, the rotation around the occiput does not involve much energy expenditure, for there is alternate relaxation and contraction. This would account in part for the absence of complaints of fatigue. An example of the degree of fatigue produced is the author's patient, who was made to repeat his violent rocking movements for one hour non-stop three times a day for several days without producing exhaustion, let alone a distaste for the movements. (These movements were not intended to send him to sleep.) One must conclude that the movements are less exhausting than they seem to be. At the same time it was felt that our patient tried to tire himself to send himself to sleep, for he rocked an average of two hours each night before ceasing, and said that if physically fatigued he slept better. This is only a part explanation of the rocking.

Rhythmic activities always produce a certain pleasure, as is shown in music, dancing, marching, etc., and can reduce nervous tension. The rhythm produced is not only in the neck muscles, but also in the semi-circular canals as they are stimulated. The head-bangers also produce rhythmic auditory stimulations.

Mahler (1945) has illustrated how rhythmic activity relieves boredom and anxiety. This throws light on the failure of the author's patient to respond to attempts to extinguish his rocking movements by repetition of the rocking to the point of exhaustion, and thus removing any secondary gain of pleasure. This form of treatment failed because it tried to remove his method of defence (namely rocking) against the anxiety of insomnia, and not the anxiety itself.

Levy (1944) found that diurnal rhythmic movements in hens and horses and children are related to restraint of activity and movements, but a history of restraint does not seem to be a feature of head-rockers.

The next aspect is how could such violent movements rock the author's patient to sleep, for his movements were hardly a lullaby? On the one hand, the violence suggested aggression, but if phantasies were present they were impossible to elicit. It could be that he had to exhaust his aggressive feelings in order to go to sleep. In some infants the rocking is gentle, and may be considered to be a simulation of a maternal lullaby. The violence in the author's case indicates there must be alternative reasons as well.

A lead is given by Oswald's papers (1959, 1960) on falling asleep during intensive rhythmic stimulation. He has shown that such stimulation, with or without the eyes closed, will produce sleep, and that voluntary movements made by the subject will continue into sleep.

Oswald's means of producing sleep fulfils exactly the criteria of those postulated by Kubie and Margolin (1944) as needed to produce hypnosis, namely, a state of relative immobilization with the field of attention focussed on one area, causing

withdrawal of attention from others. Another condition required is a state of monotony dependent on adaptation to the sensory stimuli. It has been pointed out (Evans, 1960) that children who rock at night are fulfilling these criteria. They are relatively immobilized; i.e. they are in bed, their rocking movements are of a limited variety, with their attention focussed upon them. They can be considered to be producing a state of auto-hypnosis. Oswald links up rhythmical stimulation with the production of animal hypnosis, which he identifies with sleep.

It is considered that the case presented is one of sleep resulting from auto-hypnosis, a consequence of movements which reduce anxiety. The attempts are only partially successful, for as a result of his success he begins to sleep and his activity diminishes, allowing his anxiety to return, thus waking him up again. For this reason exhaustion is an important complementary part of his manoeuvres to produce sleep. As mentioned, a successful exhausting pillow-fight and a good hard day's work produced rapid sleep.

This leads us to the problem of why some children rock gently and others violently at night. A line of investigation is suggested by the well-known observation that some people when under stress fall asleep. An example of this is an adolescent boy who would suck his thumb and fall asleep within a matter of minutes when reprimanded. Conversely, there are people who react to stress by becoming over-active. Sleep is regarded nowadays as a diminished level of vigilance. A leading article in the *British Medical Journal* (1960) pointed out that slow rhythms of low intensity diminish excitation whereas rapid rhythms of high intensity increase it. Oswald has shown that the latter may produce paradoxical results, namely, sleep. Children may thus achieve sleep by either violent or gentle rocking. The former is a paradoxical result.

VOL. 2 1961

CONCLUSION

In conclusion, I believe the case presented is one of nocturnal rocking in all essential features, but of most unusual severity and persistence. A constitutional predisposition may be present but is impossible to confirm. His physical ailments do not appear to have any direct relationship.

The various manifestations of this syndrome are regarded as attempts either to ensure sleep or to maintain it. Patients who rock during sleep or before sleep are dealing with anxiety or tensions which would cause insomnia otherwise. The tensions producing wakefulness are reduced by the movements, which discharge anxiety, produce exhaustion and result in auto-hypnotic states. It is considered that all these features are present in varying degrees in each case.

SUMMARY

A 17-year-old boy was admitted to hospital for investigation of his bizarre movements which had occurred while going to sleep and during sleep every night since infancy. The case is presented giving reasons for the author's diagnosis. A survey of the literature follows and an explanation of the movements as a means for inducing sleep is attempted. The various aspects of rocking at night before or during sleep and the reasons for their presence are discussed.

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VOL. 2 1961

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A CASE STUDY OF DEVELOPMENTAL AUDITORY IMPERCEPTION: SOME THEORETICAL IMPLICATIONS

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THIS paper describes a case of auditory imperception which displays some singular features. The report will be followed by a brief discussion of the condition in relation to this example of it.

CASE REPORT

The patient, an 8-year-old boy, was studied as an in-patient at the Montreal Children's Hospital, over an 8-month period until June 1960. The principal difficulty was complete absence of speech. He did not use words to express himself and did not comprehend words used by others.

Social background

He was resident in Montreal (from English-speaking parents). There was a normal 5-year-old brother. His father (aged 40) had shown some psychopathic traits in the form of drunkenness and desertion. The mother (aged 36) suffered from a recurrent phobic state. She seemed to possess good maternal qualities, being in no way a "refrigerator parent" (Kanner, 1944).

Medical history

Uncomplicated breech delivery (23 October 1952). At 7 days a Proteus meningitis developed which rapidly responded to Streptomycin. Subsequent motor development proceeded normally. He held his head up at 4 months, sat at 8 months, stood at 13 months and walked at 18 months. First tooth at 6 months. Crying and babbling were normal. Adaptive behaviour was normal since he mouthed objects and manipulated them well with his hands. Socio-personal behaviour and speech were peculiar.

Childhood behaviour disorder

The mother brought him to hospital at 15 months complaining that he disliked people and resisted being cuddled. Only inanimate objects interested him and he had a passion for sameness. There were teeth-grinding, head-banging and finger-trapping habits. He resisted non-coercive bowel training and worked himself up into tempers frequently. There were no signs of him being affected in any way by the human voice.

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Investigations and diagnosis

Psychological examination (Cattell Infant Intelligence Scale) gave an I.Q. of 80. E.E.G. was within normal limits. Auditory stimuli were given during normal sleep. Mouse and bell stimuli were without effect but bang sound produced K-complexes and spindles. The report concludes "Hearing tests during sleep would suggest complete deafness for high tones with preservation of some hearing in the low tone-range of the bang sound".

Audiometry showed adequate responsiveness to clinical hearing tests for speech but no reaction to the human voice.

Following clinical examination a tentative diagnosis of early infantile autism was made (Kanner, 1944).

Investigations were repeated a year later at 2 : 6. Cattell Test I.Q. was 63. E.E.G. now revealed a left-sided parieto-temporal spike focus. Vestibular function assessed by caloric tests was normal. Separation anxiety had developed although the clinical picture still suggested psychosis. A diagnosis of symbiotic psychosis was made. (Mahler, 1952.)

VOL. 2 1961

Further investigations were done between 4 and 5 years of age. *Psychological testing* gave an I.Q. of 89 on the Nebraska Test of Learning Aptitude (Fourth Mental Measurement Yearbook 1953); *Audiometry* (Psychogalvanic skin resistance): "5/6/56. The audiogram shows a 15–20 db loss over frequencies 250–4000 cycles/sec pure-tone in both R and L ears." On *psychiatric examination* his behaviour had improved greatly and he smiled normally. There was no excessive separation anxiety on leaving the mother. He was fully toilet-trained and other social accomplishments were well developed. Speech had not appeared, receptive or expressive. A diagnosis of severe aphasia was made.

He attended the hospital psychiatric day nursery-school for some months, three half-days a week at 6 years and began group and individual speech therapy. There were no signs of speech at 7. He attended a day-school for aphasic children for 6 months in 1959. The E.E.G. and pure-tone Audiogram were unchanged at 7 years.

In-patient observation

He became an in-patient on the psychiatric ward of the hospital in September 1959 for more intensive observation. He settled down quickly. Even though he could not communicate with the staff or other patients verbally, he made his wants understood by gesture. He was affectionate towards the nurses. He was generally cooperative and friendly. He laughed appropriately. He was of normal height and physique, walked and ran normally, dived and swam well. His attention for woodwork or cutting paper was intense. He was eager to do jobs and worked persistently.

Despite constant verbal stimulation, the only words he was consistently heard to use were sounds derived from every-day noises, such as cars (ehrr), dogs (wuff) or trains (chu-chu). Once when prevented from going swimming he filled a basin with water and made swimming movements with his hands. He drew and painted with great rapidity like a lightning sketch artist. His pictures were notable for their detail, accuracy and excellence of spatial relations. After his daily excursions he sat

down on his own and drew cartoons of where he had been and what he had seen.

Dressing, washing and table manners were normal. Tempers were not frequent or severe and appeared to originate from frustration in not being able to express himself. He was responsive to displeased looks and remained sad and fretful until smiled at.

Psychological examination on admission

Nebraska Test of Learning Aptitude. This is a test devised for hard of hearing children between 4 and 10 years of age. Items which involved copying were accomplished at his age level but reasoning tests were poorly done.

Raven's Progressive Matrices. He was above the 50th percentile.

Seguin Form Board. He filled forms into the appropriate spaces well at the 6-year level, even when blindfolded.

Goodenough Draw-a-Man Test. Mental age of 9 years.

Bender Visual Motor Gestalt Test. Mental age 7–9 years.

Medical status

Physical examination was normal. Skull X-rays including lumbar air encephalogram were normal. (Done 7 March 1960.) He had two major epileptic convulsions in hospital and was placed on sodium phenytoin 60 mg tds (1 April 1960).

He was observed in occupational therapy, physiotherapy, and school, as well as on excursions and when playing with other children. He was seen to be left-handed in doing most things including school-work. He was able to write numbers and letters with only occasional reversals. He labelled pictures with names he had learned, such as boy or dog, and he could label the various parts of the body. Some verbs were used correctly, such as sit, walk, swim, which were appropriately applied to the situation depicted. When presented with the words he drew appropriate pictures.

Special tests

He easily copied simple geometrical figures. (Piaget, 1956.)

Concepts of verticality and horizontality were at Piaget's stage 2B (his age). Men drawn on the slope of a hill were vertically constructed. The levels of fluid in bottles drawn at various tilts from the perpendicular were made parallel to the flat bottoms of the containers even when upside-down. Occasional diagonals were made. (Piaget, 1956.)

In conclusion, his performance on one of the diagrammatic layouts described by Piaget (1956) to test several sorts of spacial concepts at once, will be described. Other tests which were used, do not add anything in principle. "The apparatus consists of two identical models representing some open country. Model A is traversed by a stream from top to bottom. Along its right bank runs a hill on which stands a house with a yellow roof. The model is crossed diagonally by a road starting at the left-hand corner. To the left of this road stands a large house with a red roof, and a path connects it with the yellow house, crossing the stream by a bridge. In the upper left-hand corner of the model stand three trees disposed about a small hillock. Model B is identical in all respects but is rotated through 180 degrees and

separated from Model A by a screen to prevent the subject looking at both models simultaneously. The child [has to] . . . place a small doll on Model B in the same position as a doll placed on Model A by the experimenter." The patient was good at this and instantly grasped what was required of him. The doll he placed on Model B was usually positioned correctly with appropriate fore-back transpositions. It was correctly rotated to face the same landmarks as its counterpart in Model A. Sometimes slight errors were made in rotation. The level of performance was at his chronological age (2A-3A). He then rapidly sketched the scene.

Developmental auditory imperception

This case of inability to speak or understand speech, in a boy with apparently normal hearing, is believed to be similar to others, subsumed under such diagnostic labels as: congenital word deafness, congenital auditory imperception, and developmental aphasia. The term auditory imperception is preferred by Russell Davis (1957), who does not wish to exclude an acquired aetiology. Developmental auditory imperception is a more accurate name, since the childhood occurrence is indicated.

VOL. 2 1961

Imperception is a term derived from Hughlings Jackson who applied it to agnostic disorders in adult patients (Brain, 1956). Congenital word deafness, aside from its aetiological implications, limits the disability to a word perceptive one. Worster-Drought and Allen (1929*a*) took account of this latter limitation, when they introduced the term congenital auditory imperception, which refers to an auditory discrimination defect and is therefore more inclusive.

Developmental auditory imperception will be used henceforth in this paper. It would appear to be a distinct clinical entity, although there is some overlap with high-tone deafness (Creak, 1932; Ewing, 1930). There are all degrees of severity, it is often familial and affects boys much more often than girls. The child is usually quite normal until about 3, when speech fails to develop, even though babbling was apparently normal. The child appears deaf, being inattentive to speech, but testing reveals adequate hearing at all frequencies. It is assumed that the words cannot be adequately distinguished from each other, so that no meaning is attached to them. Sounds such as music may or may not be differentiated (Bartlett, 1932). Sometimes words are reproduced (echolalia) but are not used. Occasionally babbling noises are used consistently, to indicate wants, to such an extent that an individual language comes into being, which is understood by close associates (idioglossia). The differential diagnosis is from mental retardation, hearing loss and severe dyslalia. Reactive behaviour disorders occur, presumably from frustration.

This singular disorder has been known for over a century and the literature on it is quite extensive. (Worster-Drought and Allen, 1929*a*, *b*, 1930; Worster-Drought, 1943.) Allen's historical review (1952) is to be recommended as a summary.

Diagnosis is made clinically and is aided by audiometry. (Creak, 1932; Ewing, 1930; Wolfermann, 1955.) Prognosis is as yet unknown. Treatment is the employment of suitable educational procedures. Attempts must be made to teach language through channels other than the auditory. Lip-reading and other methods employed in schools for the deaf are used. Hearing is not neglected and conventional speech therapy is persisted in. (Brain, 1955; Kanner, 1957.)

Case discussion

It is apposite at this juncture to take stock of the different varieties of behaviour this case demonstrates, since it is only by analysis of psychological functions that maximum understanding is obtained. A similar point was made by Worster-Drought and Allen (1929*b*, 1930) in discussing their case of this condition. They found conventional neurological techniques, as employed in adult aphasics, to be inadequate in the boy aged twelve years whom they examined. They stated: ". . . it might be more valuable to consider what the patient had in spite of his disability, rather than the functions in which he was deficient . . ." (1929*b*).

In the following discussion this will be done.

Affectivity

It is clear that in the case presented above, the abnormality was in the cognitive sphere at the time of in-patient observation, and the emotional life was remarkably normal.

Cognitive functions

Normal development will be mentioned so that the case can be contrasted. The child passes through several stages in the course of his intellectual development: sensorimotor, representative and conceptual (operational).

The sensorimotor stage takes up the first year of life. Motor and perceptual skills grow and are soon well developed. They obey laws similar to those found to operate in animal learning. The emergence of the ability to imitate words makes speech possible.

The representative stage in the second year is marked by the emergence of symbolic play, language and the ability to imitate what is no longer in front of the child. Action is no longer restricted to the sensible present. Previous experiences are evoked in the present, by symbols, which resemble them approximately, imitations, which resemble them closely and signs (words), which do not resemble them and are conventional. Mental images are imitations. The child is no longer confined to acting on present objects and may act upon mental images of them or on symbols representing them, i.e. he can think as well as act.

Logical concepts are reliant upon conventional signs, i.e. words, they remain very rudimentary and general, without them. Spacial concepts are more reliant on visual images (Piaget, 1953*b*).

Sensorimotor skills

To return to the patient under consideration, it will be obvious that he showed normal sensorimotor behaviour. The only exception to this was his inability to imitate words.

Symbolic play

He could evoke previous experience in a meaningful way. The swimming incident illustrated this. He played at being the postman, going shopping, etc., normally.

Representative imitation

Drawing and painting were well developed activities and were his main means of evoking the past and indicating experiences that interested him.

Spacial concepts

These were assessed by special tests (Piaget, 1956). He was able to reproduce geometrical figures precisely. He tied knots well. Concepts of verticality and horizontality were at his age level. He placed a doll in a country scene, at a level commensurate with his actual age. In this area no abnormality was discovered.

Logical concepts

Having displayed his talents first, it will be apparent that the major defect lies in the province of logical and mathematical concepts. He could only use written numbers up to 5. He used many nouns and a few verbs but his education in learning to use written words was not far advanced, since it had not been realized how important this is, in these cases. Without signs of some sort, there is no evidence that true logical concepts develop. He appeared unable to imitate and use spoken words. He did use a few noises resembling situations they were derived from (semi-signs) such as the sound of dogs barking or cars accelerating, like a child in the second year, learning to speak (Piaget, 1951).

It is concluded that considerable backwardness in logical concept formation existed. It is postulated that this was due to the lack of conventional signs, used consistently, that would have enabled him to form logical concepts. For some unknown reason, spoken words could not be used.

VOL. 2 1961

PATHOGENESIS

Finally, a few hypotheses will be considered about the possible cause of the condition. It would be easy to understand why the boy was unable to speak, if the view was taken that he could not discriminate between speech sounds. Indeed, developmental auditory imperception closely simulates partial deafness (Creak, 1932), and could not be properly separated until audiometry was introduced. But audiometry was essentially normal. Cases are well documented in which there is excellent repetition of words, but they are not used (Allen, 1952).

The basic difficulty would therefore appear to be an inability to use auditory signs in conceptual thought. Other findings are considered to be secondary.

A word on how this comes about: Russell Davis (1957) believed developmental auditory imperception to be psychogenically caused and to follow infantile psychosis. He used Bartlett's case (1932) to illustrate this. Although the case presented above would also help to substantiate this theory, the view taken here, on account of the E.E.G. evidence, is that the apparent psychosis in infancy was in fact a severe reactive behaviour disorder in a brain-damaged child.

Another view on the aetiology, is that it arises as a congenital defect. It is however tempting to ascribe the present case to acquired brain damage, resulting from the attack of meningitis at a week of age. Speech is probably always controlled by the left cerebral hemisphere (Penfield and Roberts, 1959). When the speech area is the site of active epileptic discharges, transfer of control elsewhere is hampered.

CONCLUSION

The boy described with developmental auditory imperception must be compared to a normal boy of the same age to understand his principal handicap. The functions of language are brought to our attention in so doing.

Speech enables experiences of many persons, at different times, to be assembled in a meaningful way by an individual. This is an advance on symbolism, which is personal. Combined with the scientific method (the term being used in its widest sense), language has developed into a highly differentiated technique for understanding the world.

The ability to use words develops throughout childhood along with the growth of logical concepts. The vast store of knowledge of our culture is thereby made available.

SUMMARY

A boy aged 8 years was described, with apparently normal hearing, who was completely unable to speak or comprehend spoken words.

The history included an attack of meningitis in infancy, grossly abnormal behaviour in the first few years of life and major epileptic seizures. Despite this, he appeared to be normal emotionally.

Out-patient observations was supplemented by intensive study on the Psychiatric Ward of a children's hospital.

The case was considered to be an example of a distinct nosological entity, which has been called various names, and reasons were put forward for preferring the term development auditory imperception. The literature on this condition was briefly referred to.

The boy's psychological functions were enumerated with reference to the normal development of the child according to Jean Piaget, which was also briefly described.

The principal defect appeared to be an inability to use auditory signs (words), which led to a poverty of logical concepts. These were believed to develop along with the acquisition of written words.

Pathogenesis, aetiology and some theoretical implications were discussed.

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VOL. 2 1961

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BOOK REVIEWS

PIAGET, J. and INHELDER, B. **La Genèse des Structures Logiques Élémentaires.** Delachaux et Niestlé, 1959, pp. 295, 21s.

IN THIS recent publication, Professors Piaget and Inhelder attempt to bridge a fascinating gap between the child's early co-ordination of sense, movement, anticipation and imagination and the concrete thinking that characterizes his intellectual activities after he reaches school age.

The authors wish to show that, important as language is in the development of the capacity to classify objects and to discover relationships between them, it is not the sole factor in the growth of this process. At least as important is the rôle of previous action and manipulation. Piaget and Inhelder embark on this research by first conducting a series of experiments involving the classification of objects of different sizes and colours, and following this by simple tests of the concepts of 'all' and 'some'. Here incidentally is a part of the monograph which may call for critical comment, in view of the authors' claims that their experiments are not concerned with the rôle of language. The instructions to the children cannot avoid language and one might be led to question whether some of the difficulties arise linguistically from the child's personally limited understanding of words like 'all' and 'some' and his tendency to interchange subject and predicate in propositional sentences involving 'all' and 'some'. However, it is impossible to see how one could improve upon these experiments for their purpose, and the method obviously calls for spoken question and answer.

A new feature in this monograph is that the authors tested some 2000 children, and provide in all 25 tables giving percentage measures of the growth of the children's thinking in relation to their age. This number of children is large enough to enable statistical significance to be determined.

The authors then discuss the results of an interesting series of experiments on the inclusion of classes and complementary classes, and again provide plenty of numerical evidence to support their thesis. Another section, particularly interesting to English readers and those concerned with the use of intelligence tests, is Chapter 6 on the multiplicative combination of classes. Next an important chapter follows on the relation of the intellectual mobility of the child to his powers of classification. The authors clearly demonstrate that the child's readiness to change established criteria or bases of classification in the light of new elements, and also his capacity to anticipate modes of classification, are important factors in his success in classifying objects.

Most of the material refers to visual perception, but in Chapter 8 the authors study classification by touch and feel.

The study of asymmetric relation-finding, additively in seriation and multiplicatively in correlating, are studied in the last two chapters. Equivalence and substitution of classes and relations are not dealt with.

The whole monograph forms a valuable break into new ground of great interest to those concerned with children's development over the nursery and infant school years. It is very suggestive for further research and its conclusions are particularly noteworthy since they are based on large samples of children and provide tentative norms by which one could assess the logical growth of children in other groups of the same age. These groups might be culturally different or made up of various classes of exceptional or handicapped children.

It is to be hoped that an English translation will soon appear for the benefit of teachers and research workers interested in the growth of children's thinking.

E. A. PEEL

GLADYS NATCHEZ: **Personality Patterns in Oral Reading: A Study of Overt Behavior in the Reading Situation As It Reveals Reactions of Dependence, Aggression, and Withdrawal in Children.** New York University Press, Washington Square, New York 3, pp. 98. $2.50.

THIS book offers a worthwhile contribution to the literature on the subject of reading disability in young children. The author is concerned with the association between emotional and reading difficulties and has recognized in her study of other research on the subject the consistent appearance of certain traits and reactions frequently associated with frustration. She aims to show how or why reading and emotional difficulties are associated and has selected dependence, aggression and withdrawal behaviour for those personality traits which are likely to be pervasive in the individual child and thus show up in both reading and non-reading situations.

Before the presentation of her own material Mrs. Natchez briefs the reader on previously done studies of reading problems in young children. The approaches mentioned include those of the early investigators who focussed on perception and eye movements as relating to reading failure or success. Another group are the pioneers in the exploration of the relationship between personality and reading performance, who concluded that children with reading disability usually show signs of emotional disturbance, and brought to light the dilemma of whether personality problems were the cause of reading problems or the result. A third group of investigators has been dealing purely with the personality aspects of reading problems. Mrs. Natchez is influenced in her thinking by both of the last two groups, but sees a need for further exploration and delineation of the relationships suggested.

VOL. 2 1961

Her own research was planned to test two basic hypotheses: (1) The retarded reader will display more frustration-type reactions in the classroom reading situation than the non-retarded reader. (The term "retarded reader" does not imply "retarded child".) (2) The retarded reader will react to the reading situation in the way he reacts to frustrating situations in general.

The specific problems were to determine whether the reactions of the retarded reader in the reading situation are significantly different from those of the non-retarded reader and to determine the relationship between the reactions of the retarded reader to frustration in general and in the particular reading situation.

To test the first hypothesis, 60 boys were selected for study and matched as to age, grade, intelligence, race and school class. They were divided into two groups of thirty retarded and thirty non-retarded readers. Reactions were recorded by the use of test instruments especially developed for this purpose. The data were analysed by comparing the means of total reaction scores of each group.

To test the second hypothesis, 59 retarded readers of average intelligence who achieved at least one year below grade level on a standard achievement test were selected, and each used as his own control. The observations were made in the normal classroom oral reading session and a controlled equivalent individual oral reading session. Additional data in regard to non-reading situations were derived from teachers' ratings, peer ratings, case histories and reactions obtained during observation of an especially designed frustration-inducing game. Three separate processes were employed for testing this hypothesis: (1) comparing composite reaction scores from the reading situation with composite reaction scores from non-reading situations; (2) comparing results of the frustration-inducing game with its controlled equivalent in reading; (3) then dividing the subjects into three groups according to their reactions in non-reading situations. The final step was to study the reaction scores in reading to determine whether they could be reclassified into the same groups as they fell into in the non-reading situation.

The tabulation and analyses of the results of the procedures support the following conclusions:

(1) Children who have difficulty with reading often experience considerable distress during the reading situation. This distress may evoke frustration reactions, such as excessive dependence, aggression, and withdrawal. When engaged in oral reading, retarded readers generally manifest a significantly greater proportion of these three reactions than non-retarded readers.

(2) There is a significant relationship between reactions manifested by retarded readers in reading situations and in frustration situations other than reading. That is, a retarded reader whose behaviour to frustration can be described characteristically as either dependent, aggressive, or withdrawn will tend to display the same type of behaviour during a reading exercise (pages 55–56).

In discussing the implications of her findings, Mrs. Natchez explains the application to practical school situations. She points out that a child who has difficulty with reading, and responds by using

one or more of these frustration reactions, may be further blocked in his learning, which in turn may ntensify his frustration. She would recommend also that school personnel concentrate their efforts on prevention and decrease of frustration throughout the school years, but especially in the primary grades. Her premise is that the greater the discrepancy between actual reading level and expected grade reading level the more distress is engendered. Distress, in her terms, blocks learning. She further stresses the importance of reducing frustrating conditions in the primary grades, plus providing remedial help at the initial indication rather than after failure has been observed through several grades. She makes the additional suggestion that sound psychological orientation in specialized instruction and remedial help is a vital factor because of the relationship between academic weakness and emotional stress.

E. Omwake

W. C. Olson: **Child Development** 2nd edition. D. C. Heath and Co., Boston, 1959, pp. 497. 44s. Professor Olson's book was written—he states in his Preface—with the needs of teachers and prospective teachers in mind. Most of the educational doctrine it contains is eminently sound, placing strong emphasis on adaptation to the individual child with his own rate of development, and on educational practices designed to foster growth in all senses, and to use, and stimulate, the natural desire to learn. Many researches are quoted tending to prove the value of treating children as endlessly variable beings sharing a common forward impulsion which gives them a vested interest in growing up, rather than as objects to be moulded and graded according to the degree to which they conform to a predetermined standard. Yet the need to convince teachers and others that child-centred methods really work is still painfully obvious. In the following quotation the past tense strikes with harsh, if unintentional, irony:

> "In the prescientific era, words such as 'stupid', 'lazy', 'does not try', 'not interested' were used as if they represented a condition the child could easily change. Similarly, exhortations to be 'the best in the class' were used with lack of knowledge of individual differences in growth. By posting marks and other abuses of marking systems, children were sometimes encouraged to compete in an unequal race."

The concept of growth is central to Professor Olson's philosophy. The idea of the individual curve of mental development has been expanded, integrated with what is known about growth of the tissues and maturation of physiological functions, and extended to include acquisition of competence in all the main scholastic subjects. Some reservations are called for here. Certain parallels can indeed be established and may suggest useful hypotheses for research, for instance in exploring the relationships between physical maturity and readiness for specific educational experiences. But there is some danger of confusion and misapplication when physical measurements, tests of function, such as strength of grip, and tests of acquired knowledge, such as spelling, are treated (by common reduction to age-norm standards) as though they were equivalent, and all combined in an "organismic age". The "educational ages" are closely geared to cultural expectations; indeed they are standardized on a population educated by methods which, the author maintains, have probably failed to develop these skills to anything like the optimal degree in most children. How valid is it, then, to average them with measures such as height, which (in a physically well-nurtured community) depend so much more on constitutional and less on environmental factors? Moreover, however one stresses the normal variability of growth, to say that a child's development is retarded by so many months or years is sure to create anxiety in teachers and parents, and likely to invite the undue pressure to "catch up" which Professor Olson rightly deplores.

The standard of prose in this book leaves much to be desired. Some paragraphs are so carelessly written that several readings still leave doubt as to their meaning. Nor is theoretical exposition a strong point. Platitudes are laboriously developed, while difficult concepts are skated over, sometimes without even a reference to a source of enlightenment. Where references occur, they are more often to minor authors than to the original authorities, and certain key concepts and theories are not attributed to their founders at all. Such serious, and mostly preventable, shortcomings are a very great pity in a book which contains, on educational matters, so much valuable sense.

Terence Moore

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AN EMPIRICAL APPROACH TO MOTIVATION BASED ON THE BEHAVIOUR OF A YOUNG CHILD

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VOL. 2 1961

INTRODUCTION

FROM the records which the writer made 15 or 16 years ago of the behaviour of one of his children from near birth until 18 months he has abstracted those items which seemed unrelated to any organic need. Behaviour which was evidently social, such as clutching the adult, smiling, crying on being put down, dislike of losing contact, etc., was also excluded as presenting fewer motivational problems; in addition such behaviour has been ably reported by Stern (1948). Only that behaviour was included which was accompanied by some evidence of motivation, as detailed below. For these reasons the earliest behaviour in the schedule (Table 1) is from about the age of $2\frac{1}{2}$ months.

In the schedule the diary entries are classified in the first place by the type of change, described concretely, which the behaviour brought about (column 4). It was necessary, however, to be sure that the acts were performed because of some need to change a relationship, i.e. that they were not just random or mere instinctive 'exercises' or need for movement in general. Consequently some evidence of motivation was required. Five types of evidence were accepted (column 3), namely (i) concentration of attention, (ii) perseverance or unambiguous repetition, (iii) expressions of gratification concomitant with a given result, (iv) expressions of annoyance at failure, (v) precedence over satisfaction of organic needs such as eating and drinking or avoidance of physical hurt; or displacement of eating and drinking habits more effective than the new experimental mode in satisfying the need.

Of these five criteria of motivation the third and fourth, the expressions of emotion, are the most striking to the observer. It might, however, be argued that they do not constitute evidence of motivation so much as *post hoc* appraisals of a result which may have been fortuitous. The first time a child makes a certain movement or a noise this may well be so, and indeed the results of its actions have in the first place to be learnt by trial and error. It is extremely difficult, in observing a young

TABLE 1

I Age in days	II Observed behaviour	III Evidence of motivation (appraisal of resulting relationship as favourable or unfavourable)	IV Primary classification of relational change
78–92	Studies hand movements, which seem to be related to grasping.	(i) visual concentration with eyes half closed. (ii) perseverance. (iii) crooning with pleasure during last 3 days.	Producing visible and possibly kinaesthetic change (whether the child is aware that the hands are its own is immaterial).
85–92	Looks at (familiar) end of wardrobe at head of cot, bending back head to do so.	(iii) croons.	Recognition of situation.

TABLE 1—*contd.*

I Age in days	II Observed behaviour	III Evidence of motivation (appraisal of resulting relationship as favourable or unfavourable)	IV Primary classification of relational change
99	Looks at other members of family.	(iii) broad grin and crowing. (This must have antedated the diary entry, because there is a note that the emotional expression accompanied the sight first of the mother and sister and later of the father.)	Recognition of people.
118	Knocks rattle by quick inaccurate sweep of his arm.	(ii) repetition.	Visual and audile (predictable?) change.
119a	Grasps rattle and grasps adult's finger, both as the culmination of uncertain movements.	(ii) repetition; but cessation of uncertain movements once the object is grasped.	Brings objects under a degree of control.
119b	Watches peep-bo game and hears father saying "Hallo" as he emerges.	(iii) on fourth occasion cooed and chuckled (he had not done this for the previous 2–3 wks on merely seeing his father). With subsequent trials does so at shorter intervals, but when the "Hallo" is omitted interval lengthens.	Recognition of sequence of events. (Prediction?)
132	Bends head back to look at familiar adult who is out of range of vision.	(ii) repetition. (iii) smiles.	Seeks recognition (anticipated visual percept) of person.
163	Watches as adult repeatedly brings up face close to his and withdraws.	(iii) laughs and coos at fourth trial; the same at the first trial on the following day.	Recognition of sequence of events
164	Blows 'raspberries' (noisy expulsion of air from mouth).	(ii) repetition during most of afternoon and evening (trick only learnt the previous day).	Producing an unusual noise.
214	Watches movements of adult's feet and hands under bedclothes.	(i) follows movements visually with intense interest without emotional expression.	Study of unfamiliar phenomenon.
214a	Watches father's hand repeatedly appearing from and disappearing under bedclothes.	(iii) squeals with delight at third repetition.	Recognition of sequence of events.
247b	Given a serviette ring he first sucks it, then bangs it on the tray of his high chair. Sucks and bangs alternately, the sucking phases becoming shorter and the banging longer until he practically ceases sucking.	(ii) repetition (v) the banging gains precedence over the more primitive oral exploration. (v) the banging is persevered with despite a mild fear reaction as shown by his usually blinking at each bang.	Oral exploration. Produces a noise.
294	Makes a new and persistent "goo-goo" noise, apparently directed to people.	(ii) repetition.	Produces a noise possibly with a view to its effect on people.
368a	Crawls effectively for the first time.	(iii) noises expressing extreme enjoyment.	Physical movement from place to place.
368b	Picks up small pieces of bread from high chair and puts them in his mouth.	(v) will not allow bread to be put in by adult; if adult does so he takes it out of his mouth and puts it in again.	Performing himself an operation previously done for him.
380–420	Stands in high chair and shakes it until it nearly overbalances.	(ii) repetition. (iii) gleeful expression.	Moves large, heavy object, and produces noise; produces a rhythm (audile, kinaesthetic, visual), i.e. an anticipated sequence of similar events.

TABLE 1—*contd.*

I Age in days	II Observed behaviour	III Evidence of motivation (appraisal of resulting relationship as favourable or unfavourable)	IV Primary classification of relational change
422	Fills bucket with pebbles.	(i) concentration (ii) perseverance.	Achieves a relationship of completion (fitting).
424	Opens and shuts drawers in neighbour's house.	(v) continues even after knocking skin off finger in doing so (when he cries for about ½ min but stops suddenly and resumes activity on drawer).	Causing heavy object to move a regular way.
409–470	Fits lid on copper kettle standing in hearth.	(ii) a favourite activity over two months.	Achieves completion-relationship (fitting).
451	Recognizes a girl and a rabbit in a picture (having recently observed tame rabbits).	(iii) characteristic recognition grunt as used when pointing to a familiar object other than in picture.	Grasps likeness-relationship translated into different spatial form and scale.
453–6	Recognizes many objects in pictures (people and animals).	(ii) perseverance. (iii) recognition-grunts; draws adult's attention to objects.	As above.
456	Pointed to a train.	(iii) squeals with excitement and points repeatedly.	New visual experience.
457a	(1) Wants statuette in living room stood upright. (2) Wants bent back cover of book put straight so that he can close it.	(iv) squeals and appeals to adult.	Restoration of anticipated schema (frustrated recognition).
457b	Fits smaller tin inside larger.	(ii) repeated trials when something inside larger prevents smaller one going in completely.	Achieving completion-relationship (fitting).
457c	Rushes round play-pen (before he can walk alone), preventing himself falling by dangling arm outside rail.	(i), (ii) concentration and repetition (iii) gusto and evident pleasure.	Locomotor effectiveness carried to limit despite risk of falling.
457d	Climbs on to wooden box.	(ii) repetition.	Locomotor effectiveness.
458a	Picks out red bricks from a multi-coloured assortment.	(v) the red bricks are scattered at random and so not the easiest to reach.	Visual discrimination.
458b	Walks around with small hollow skittle in mouth, through which he puffs and so makes a noise.	(iii) repetition. (iii) laughs and chuckles when he notices he is being observed, still holding skittle between teeth.	Producing unusual noise; securing notice for his achievement.
459	Opens and closes door.	(ii) repetition.	Causing heavy object to move in an anticipated way.
468	Gets up on his feet to walk, even if he has to go only 4 ft., although having been able to walk independently for only 5 days crawling is quicker and surer.	(ii) repetition during most of his play-time. (iii) (sometimes) utters noises of satisfaction. (v) preference over established habit by which material objectives would be achieved more efficiently. (v) deserts toys to practise walking.	Tries new type of locomotion.
470	Fits serviette ring on neck of jar.	(v) will not eat meal unless he is allowed to do this.	Achieves completion-relationship (fitting).
476	Points to cows and utters a sound like "bow-wow".	(iii) shows great excitement.	Grasps relationship of likeness.
477	Fits a peg in a hole, immediately pulls it out again and repeats several times.	(ii) repetition. (iii) exclamations of gratification.	Completion-relationship (fitting).
485	Pushes pram about.	(ii) favourite activity at peak.	Moving heavy, large object.

VOL. 2 1961

TABLE 1—*contd.*

I Age in days	II Observed behaviour	III Evidence of motivation (appraisal of resulting relationship as favourable or unfavourable)	IV Primary classification of relational change
488	Found older sister hugging father's leg, tried to pull her away, with sounds of displeasure. When sister let go he took over the leg, but when she went to the other he wanted that one, still squealing with displeasure.	(iv) expressions of displeasure.	Sole possession of (control over) object or other person.
498a	Tried to push sister away from her mother, who was hugging her on settee.		Sole possession of (love-relationship with) other person.
489b	Calls horses "bow-wow" (says the same for dogs but with less emphasis).	(iii) points excitedly.	Grasps like-relationship translated to different scale (horse is like a dog only bigger).
492	Throws a brick about the room.	(ii) favourite activity.	Producing a spectacular change or effect.
497	Presses finger on to a bit of bread so that it sticks, knocks it off and repeats twice, finally conveys to mouth thus.	(ii) repetition for two days. (iii) laughs and looks at father as if for approval. (v) preference to more efficient way of eating already learnt (picking up bread in ordinary way).	Explores a new type of feeding. Secures notice for his achievement.
505	Tore up paper-covered book.	(ii) repetition until checked.	Creating a spectacular change.
506a	Walks around carrying a small object (stick or flag).	(ii) favourite activity at this phase.	Possession of (having at disposal) an object.
506b	Walks around with hands above head, then whacks them down on seat of settee.	(ii) favourite activity at this phase.	Producing a noise by robust use of strength.
506c	Pulls books out of shelf.	(ii) favourite activity at this phase.	Moving fairly heavy objects; producing visible change.
506d	Carries coal-hammer about house and thumps it on floor.	(ii) favourite activity at this phase.	Control over heavy object; producing unusual and considerable noise.
506e	Walks around ringing handbell.	(ii) favourite activity now. (iii) four of five activities recorded for this day are variations of a general carrying about of objects, hence repetition of behaviour pattern.	Producing a considerable noise.
506f	Pulls flowers to pieces.	(ii) does so whenever he can get at them, despite discouragement.	Producing spectacular change.
506g	Twists knobs of wireless set.	(ii) persists despite discouragement.	Control over objects.
506h	Bumps head on door, back of high chair or on floor.	(v) Does this quite hard if allowed to (not in temper) and has to be stopped.	Sensory exploration.

The several entries for day 506 are taken from a review of his activities at that time, most of which has been begun up to four weeks earlier, but owing to their casual commencement or unspectacular nature had passed unrecorded. Some have already passed their peak and are only performed sporadically. The review in fact lists 27 habitual activities; apart from those already listed were the following which are seen to be mostly variants of previous behaviour:

Walks around uttering a short whistle (new noise), makes a din while sitting in high chair by hitting an enamel bowl with a spoon (new noise), makes spluttering noises at people (attracting attention by noise), sits in high chair and throws back his head as far as he can, remaining in this position for a few seconds (kinaesthetic exploration?), carries bits of wood about and hides them in shoes, under dresser, etc. (completion). Hits objects with stick (noise). Pulls wheeled toys about (moving object control). Pulls saucepans out of cupboard and strews them over floor. Pulls toys out of box, tinned goods off kitchen shelves (moving objects). Obviously social behaviour—hugging, romping, etc.—is omitted.

child, to say at the beginning whether an act is intended or not; there is probably an element of partial, hit-or-miss insight which guides the general form or direction of the movement, as observed in Köhler's chimpanzees (Köhler, 1927; Koffka, 1925; Morris, 1951). In any case the expression of gratification registers an appraisal of the result as 'favourable'.

This in turn implies the prior existence of a 'template' or schema against which the result is appraised. Whether the infant initiates behaviour in order to achieve a given result, or merely registers an opportunist satisfaction at a chance one which happens to tally with his need, is a secondary consideration analogous to the difference between seeking food and acceptance of presented food. What we have to classify, in a study of motivation, are, phenomenologically, the results of behaviour, which, when appraised as good, are learned and repeated. The feelings and expressions of satisfaction may be regarded as a form of reinforcement which ensures this repetition. Evidence of gratification thus serves as an indication that the result meets some appraisal-criterion. When a number of relational changes of certain types have been observed, we may then make inferences as to the sorts of criteria or 'templates' with which the organism is provided. This is attempted in Table 2. Such inferential classification enables us to speak, in a broad way, of the 'meaning' of an act, that is to say, to deduce or interpret its motivation in terms of these presumably fairly consistent appraisal-criteria.

VOL. 2 1961

TABLE 2

Categories of material events	Age in days
A. Produces (spectacular) change registered visually, kinaesthetically, etc.	78–92, 492, 505, 506c, 506f
B. Recognition (anticipation, foreknowledge of situation or sequence of events).	85–92, 99, 119b, 163, 214, 459
C. Seeks sight of familiar object.	132
D. Produces predictable change.	118
E. Produces a rhythm.	380–420
F. Brings object under control (manipulation).	119a, 506g
G. Moves large or heavy object.	380–420, 459, 485, 506c, 506d
H. Produces a new noise.	164, 247, 294, 380-420, 458b, 506b, 506d, 506e
I. Visual study of unfamiliar phenomenon (exploration).	214, 456
J. Oral exploration.	247
K. Interest in effect of action on other people (noise).	294–458b, 497
L. New mode of locomotion.	368a, 457c, 457d, 468
M. Independent performance of operation previously done by other person.	368b
N. Produces a completion-relationship.	409–470, 457b, 470, 477
O. Grasps new or less obvious likeness-relationship.	451, 453–6, 476, 489b
P. Restoration of anticipated visual arrangement.	457a (2 observations), 457b
Q. Visual discrimination.	458a
R. Possession (sole rights to, having at disposal) object or person.	488, 489a, 506a
S. New mode of feeding.	497
T. Exercise of physical power.	506b

Induction of the criteria of appraisal

When we come to reduce the primary classification of the relational changes (Table 1, column 4) to more general categories, namely the criteria of appraisal, our chief concern must be to avoid extrapolating any general feature not inferrable from the observations. The induction has to be kept to the minimum required for second-degree classification, that is, it must be logically ineluctable. Above all, any conceptual model derived from data of a different type must be rejected, since it is exceedingly unlikely that the analogy or metaphor will apply to more than one or two salient resemblances. It is thus impermissible to accept the concept of 'drive', as its underlying idea—of something which provides the power—is an extrapolation suggested by the analogy of a mechanical engine, and in addition lends itself to reificatory habits of thought. It is indeed characteristic of primitive thinking to assume that motion presupposes an agent or 'force'. Again for the sake of inductive parsimony (rather than because of any doubt about the right of a psychologist under certain circumstances to classify behaviour by purpose or 'meaning') the first stage of the process of abstraction is confined to the making of more general categories of material events. In Table 2 the observations are reduced to 20 such categories.

It is apparent that these phenomenological primary categories are capable of further grouping. Recognition (B)—the grasping of a relation of identity after a time-interval—is closely related to the search for a familiar object (C) and to the production of predictable change (D) and rhythm (E): the difference being that, already referred to, between reaction to a presented stimulus and the seeking of a stimulus-object. This group is also cognate with the grasping of new or less obvious likeness-relations (O), with the dissatisfaction at not finding an anticipated visual relationship (P) and with the discrimination of categories (Q). New modes of locomotion (L) bring new perceptions (I) and hence constitute exploration, but they also bring a much wider range of objects within reach of the child, that is, within its control (F), disposal or possession (R).

The above 20 primary classes can thus be grouped in the following five second-degree categories:

(1) Recognition or discrimination B, C, D, E, O, P, Q.
(2) Completion N.
(3) Control F, G, L, M, R, S, T.
(4) Exploration I, J, L, (S).
(5) Effecting change (so far as not covered by other categories) A, H, (L).

Even within these five classes of relationship certain affinities can be noted. Control can be exercised by produced change in an object, that is, by moving its position, destroying it, etc. A completion-relationship may be described as the realization of a mental schema, and hence is allied to recognition. Exploration can be by way of producing change: the new noises which the child discovered and practised may be described as oral/audile exploration. The practising of a new mode of feeding (S) or of locomotion (L) could be both exploration and control.

It is permissible, therefore, to ask whether these five secondary abstractions may be subsumed under one even more general relationship. It will have already become apparent that they describe relationships which, by-and-large, would be of advantage to a primitive human being in the struggle for survival. At this stage in the argument,

however, a teleological trap must be avoided. The play of children and animals—which consists in the establishing of relationships similar to the above—has in the past been explained as a rehearsal of the biologically necessary activities of the adult, and hence as an unconscious process of education or exercise of faculties. But it cannot be supposed that the young have this degree of foreknowledge or that they would be inclined so to train themselves if they had. Nor can play, or the data under consideration, be alternatively explained as the premature or practice manifestation of biologically useful adult forms of behaviour, such as the wing-flapping of the unfledged bird; the latter are reflexes or stereo-typed instinctual patterns utilizing broadly the same neural mechanisms, but the activities of play are so diverse, and different from mature behaviour, that any similarity of neural mechanism would be confined to central cerebral functioning, such as the appraisal of relationships. We can thus only ask whether some continuity exists in the criteria used by the young and the adult for the appraisal of situations.

The problem we are left with is how the immature organism can be provided with general instinctual criteria of its relationships with its environment which will cause it to develop such knowledge and skills as to make it a biologically more effective adult. Putting the problem this way suggests the nature of the single general relationship into which the five secondary abstractions may be subsumed. Recognition/discrimination and exploration make for greater effectiveness in that the individual has thereby a greater knowledge of his environment, and so more possibilities of action. The exercise of control and other ways of effecting change make for greater freedom of action: the individual can arrange wider segments of his situation to suit his needs.

VOL. 2 1961

The biological effectiveness gained by actualizing a schema or completion-relationship is not so obvious; but the ability to pursue a consistent course of behaviour, or to return to one after some interruption—in other words strength of purpose—must surely make the organism more efficient once a stage of development has been reached at which the individual caters for future needs by indirect means such as gathering food for later consumption. The greater control involved in the possession of something (attachment to an adult, having a weapon, territory, etc., at one's disposal) also comes into this category of indirect effectiveness.

It is therefore postulated that the five secondary abstract relationships are aspects of a general *relationship of effectiveness* which the child seeks to maintain or establish between itself and its environment. Biologically the powers of recognition, discrimination, exploration, control, manipulation, locomotion, and change into which this general need for effectiveness is actualized provide the knowledge, power and skills which will be useful as an adult, and thus it can be said, broadly, that the child is educating itself. Nevertheless, the child by its behaviour is achieving satisfying *contemporary* relationships *vis-à-vis* its environment. There is no need to resort to teleology as an explanatory principle. Moreover, the observed activities were self-sufficient in bringing about an effectiveness-relationship, since they were not directed towards the satisfaction of any physical need. The carrying of the hammer was not for the purpose of knocking in a nail, nor even because an adult asked for it or encouraged the child to bring it (the adult's reaction being rather one of mild apprehension lest the child drop the hammer on his toe). The opening and shutting of the drawer was continued in defiance of physical injury and presumed pain.

The new modes of feeding were less efficient than the habitual ones, and the insistence upon feeding himself certainly entailed a smaller food-intake. The motivation behind such behaviour, whatever it was, was stronger than the avoidance of pain or the satisfying of hunger.

Similar manipulation, apparently (to use a popular phrase) for its own sake, was observed by Harlow and McClearn (1954) in monkeys: when presented with a board holding a number of eyelet screws, some of which were removable and the others fixed, they learned to choose the former although not given any reward for their choice, except in the effect achieved. It seems unnecessary to regard such behaviour merely as 'autonomously motivated', as Nissen (1954) does in discussing the stick-joining of Schiller's apes. Indeed it is difficult to grasp what this term means, despite its currency in modern psychology. Nissen's amplification, that "the problem or activity often seems to provide its own motivation", would mean, if taken literally, conceptualizing the problem or activity as a vitalistic, willing-agent. If it is just another way of saying that the perception of the possibility of joining the sticks acted as a stimulus, surely the next step is that of the present study, namely to discover which classes of stimuli evoke such responses, and to see if they have any common element.

Conditioning

The possibility that highly diverse behaviour in so young a child could result mainly from conditioning of responses ministering to organic needs raises theoretical issues which cannot be fully discussed here. Earlier it was suggested in passing that the process of appraisal, with its emotional concomitants of liking or disliking, might act as a reinforcer which ensured the repetition of a satisfying result arrived at by chance (e.g. discovery of how a certain noise can be produced). This is consistent with, and complementary to, a theory of motivation based upon the appraisal of situations.

On the other hand, learning did not depend upon direct reinforcement by primary organic satisfactions. The child did not have to be left hungry before he would attempt independent feeding. His behaviour was indeed strikingly at variance with the explanation in terms of learning-theory given by J. Z. Young (quoted by Bugelski, 1956): "The mother becomes gradually less co-operative and the child has to learn to get what it needs by ways other than crying. The eye movements are used to discriminate between faces, cups, and other objects, so that the output of the brain leads to the making of appropriate noises . . .". In the child under study, the development of discriminating powers and of his abilities was certainly not motivated by conditioning upon organic needs; the initiative was always with the child, the parent rather being apprehensive about experimental modes of feeding than having to rely upon hunger as the teacher, as seems to be the case with young birds.

The more controversial issue is whether the child's responses were elicited by conditioning upon a reinforcer, such as that of parental approval. This can be tested by reviewing the observations given in Table 1 and judging to what extent this explanation is possible in each particular case, viz.:

*Not possible for reasons given below**

(1)	Only repetition made parent note behaviour, hence latter could not have influenced formation of habit.	78–92, 85–92, 118, 164, 294 (5)
(2)	Behaviour was a spontaneous single act, not taught or anticipated by parent and without model for imitation.	368a, 457a(1), 457d, 458a, 470, 506b. (6)
(3)	Spontaneous first grasping of likeness-relation could not have been induced by parent.	451, 453–6, 456, 476, 489b. (5)
(4)	Behaviour not of a type to be encouraged by parent.	368b, 409-70, 457c, 492, 497, 506c, 506d, 506f. (8)
(5)	Behaviour of a type disapproved by parent.	380–420, 488, 489a, 505, 506g, 506h. (6)

VOL. 2 1961

*Possible but not necessarily probable**

(1)	Conditioning of grasp reflex?	119a. (1)
(2)	Instinctive recognition or seeking of human face possibly reinforced by smiling of parents.	99, 132. (2)
(3)	Social conditioning? i.e. response of child to behaviour of parent directed toward child.	119b, 163, 214a, 214b, 457a(2), 458b, 468. (7)
(4)	Possible imitation.	422, 424, 457b, 459, 477, 485, 506a, 506e. (8)

In summary, the explanation of social conditioning could not apply in 30 of the 48 observations. Of the remaining 18 it could be a matter for argument. For example, if possibly imitative behaviour, which makes up half the latter, is regarded as the result of social conditioning it would have to be shown that it was reinforced by parental approval. In effect, 4 of the items could have been followed by approval, but the other 4 would have met disapproval or non-encouragement. The connection between imitative behaviour and the more general effectiveness-relationship is discussed below.

Effectiveness must be progressive

The child's behaviour was not directed exclusively to achieving effectiveness in the satisfaction of immediate needs. He preferred a new way of eating even though less efficient, and a new mode of locomotion (walking) which was temporarily less sure than the much practised crawling. The production of a new noise gave evident pleasure (i.e. was appraised as favourable). The recognition of a horse as a 'bow-wow'

*Numbers are the age index number of data, and numbers in brackets show the total number of observations covered.

type object produced more excitement than the recognition of the prototype (dog). In short, the criterion is apparently not merely that of a static effectiveness bu' of a progressive or dynamic one. The child spontaneously reached out to do fresh and more difficult things, to grasp less obvious relationship and so on.

The attraction of *new* accomplishment was indeed not just an incidental part of the motivation. Following the summary of the child's favourite activities made on day 506 there occurs the following general note in the diary: "His fashions in activity seem to obey a curious law. An activity is practised most persistently immediately after being mastered. Then for an interval of, say, 3–5 days it seems forgotten almost entirely. But then it will be given another trial, which will not last long. And periodically he will give an activity other short trials. For instance, in the first few days after he could walk effectively he did not crawl at all. Then he crawled once or twice across the room; then not again for several days. Now, at a guess, it might be a week or 10 days between each repetition".

"A further instance. About 3 weeks ago he liked to push his pram to-and-fro in the kitchen, and would continue for quite a time, or until stopped. Yesterday, to distract his attention from something else, I got him to push the pram. He pushed it once forward, pulled it once back, and then found some other interest".*

In his experiments with chimpanzees Welker (1956) similarly noted an attraction for novelty, which was significant for each animal at lass than 1 per cent risk. Merely changing the colours of the presentation board from grey to red elicited increased duration of response from all of them. Moreover he showed that interest in an object which had flagged at the end of one session would be revived during the first minute of the next. Berlyne (1955) noticed a similar recovery of exploratory activity in rats. Both with the child and the animals this phenomenon may be analogous to the reappearance of an inhibited response after an interval, observed by Pavlov: the activity ceases soon after reinforcement ceases—in other words when it no longer contains the satisfaction of novelty or new achievement; but the countermanding by inhibition is more recent than the original conditioning, and hence loses strength more quickly, so that the original stimulus, becoming then the stronger, motivates a new trial. In other words, the first mental association which the child or chimpanzee makes with the stimulus-object is that of earlier satisfaction, the 'staleness' or boredom being temporarily forgotten. But the renewed trial fails to bring satisfaction after all, so that the inhibition is reinforced and the activity dropped.

The general postulate can now be provisionally restated: the child appraises its environment with a view to the establishment of *progressively more effective* relationships. Before, however, a satisfactory general induction can be made from the above data it must be ascertained what proportion of the child's behaviour was thus motivated. The irregular intervals between the recorded items make plausible an objection that the behaviour in question was exceptional, or only occupied the child during

*It might seem that learning to walk is an exception to this development and regression of a favourite activity. But a child does not suddenly learn to walk in the same way as it might learn to push a pram and then exhaust the possibilities of the activity. It gets progressively better at walking over some months or even years. Even then, there are all kinds of exploratory variations such as walking on the toes, backwards, with the eyes closed, holding hands up in the air, etc., etc. In addition, walking becomes instrumental to a number of other activities which bring further achievement and knowledge.

an insignificant fraction of his waking life. There was indeed considerable irregularity, which was in part due to the professional preoccupations of the father, but this is not so marked in the diary itself, as only the behaviour for which there was objective evidence of motivation is reproduced in the schedule. It was fortunate for the study that on day 507 the mother went out for the day and left the child in the care of the father. He kept a full record of everything the child did during the day, never intervening except for the child's safety or the preservation of its attire.

General perusal of this 'day in the life of a child' (see Appendix) shows that nearly all his waking time was taken up with the establishment of effectiveness-relationships. It should of course be borne in mind that for this particular child on the day in question no more urgent biological need could claim priority. He was well fed and rested, and enjoyed the luxury of always having a familiar adult within sight, so that the relationship of contact with the adult would be continuously appraised as favourable without calling for action.

It is also evident from inspection that the behaviour fits in general into the primary categories, as given in Table 2. Moreover, there is ample evidence of the progressive nature of the types of effectiveness. In playing the game of getting the pieces of bread on to his plate with a spoon it was noted that he refused to use his left hand, thus making the task more difficult for himself. This episode has some theoretical interest: the behaviour-pattern was developed not by building upon a habit found successful in satisfying a visceral need, but by counteracting such. The development of the motivation was not, as according to Allport (1937), a chain-reaction of reinforcements and the merging of habits into motives, but rather the utilization of the materials at hand (spoon, plate, bread) for the invention of progressive achievements. This was also seen later in the day, when he played about aimlessly with the spoon until it occurred to him to load two pieces of bread on it at once. The progressiveness of experience was in addition shown in his bending down to get a new view of his surroundings from between his legs, and in his manipulation of the oven fittings. His attempt to climb into the oven would also be new spatial exploration, cognate with climbing on to a settee. Such an explanation is to be preferred, as more parsimonious, to the obvious Freudian one that the child was unconsciously trying to re-enter the womb. A Freudian explanation is also possible of his playing about with the rice pudding. This, like clay (regarded as a symbol for faeces), is a pliable material which shows evidence of the effectiveness of manipulatory behaviour; neither a liquid nor a hard unimpressionable object such as metal would enable the child to 'leave its mark'.

The progressive component of the effectiveness-relationship is demonstrated by two further groups of observations. There are several examples of desultory and quickly abandoned trials of earlier activities which had 'gone stale', namely the pushing of the pram, the fitting of the kettle lid and play with the rag doll. Second, there are examples of half-hearted experimental behaviour which came to nothing and were consequently not followed up—lying on the floor, sitting with his back against a cupboard and making a cackling noise (this being quickly replaced by peering through his legs), fruitless examination of an irregularly cut piece of paper, fumbling with the newspaper, which he could not manipulate satisfactorily, and momentary imitation of writing with a stick (producing no result).

VOL. 2 1961

Imitation and display as aspects of effectiveness

The imitating of the adult was not noted in the earlier part of the diary, and so needs consideration. In replacing the coal in the hearth, sweeping with the hand-brush, putting the stick in the pen-stand, it cannot be said that the child had insight into the purpose of activities, but these fall into the categories of fitting (completion) or new manipulation. It looks as if the child has suddenly tumbled to the idea of observing the behaviour of adults in order to get new ideas for effectiveness. (It was not merely that imitation had not been recorded up to this point but that the parents, aware of the general view that 'children imitate', had been surprised at the lack of imitation as a form of learning, both in this child and in his elder sister.) The diary for the following weeks records many examples of this new source of inspiration. On day 518 he cleaned his shoes with a brush after seeing his father clean his. This episode was of interest because the father did so while his shoes were off his feet, but the child brushed his while wearing them. The imitation was thus not purely mechanical, but involved some isolation of relevant elements. On day 567 he made a movement with his foot as if to operate the switch on an electric stove, and had made a similar movement against the electric wall-plug on the previous day; he fetched the newspaper, carried it to an armchair, climbed up on it and held the newspaper in the reading position; he put on his father's working gloves. Once again, no insight can be presumed, and the value of the activities from the point of view of control, exploration etc., would be limited. One must suppose that they were undertaken for no other reason but that the adult did them. The child probably had the feeling that to do what the adult did in some way made him bigger or more powerful. If this is how the appraisal went, the imitation would be another aspect of the effectiveness-relationship. It is a matter of traditional observation that children dress up to be 'like mummy' or 'like daddy'.

The desire for the approval or praise of the adult is also more prominent during this day's observation. The child shows his father that he can fit the saucepan-lid and shows off his feeding prowess. It seems as if a new criterion for the appraisal of effectiveness is emerging, namely the judgement of others.

Apparently cognate with the wish to demonstrate his achievements to an adult were certain aspects of his effectiveness-behaviour which McDougall would have called 'display', but which seemed to be entirely for his own satisfaction. It will be recalled that on days 458 and 506 (Table 1), when producing a novel noise by blowing through a skittle or holding a stick or a flag, he paraded around. On day 551 he found a strap, buckled in the form of a loop, to which a soft woollen ball, about 6 in in diameter, was attached. He put this over his head and walked around with the ball hanging about his knees. When it was taken off him he put it on again. He wore it continuously for three days. On the fourth day he went about with his father's necktie hanging round his neck. On day 512, having learnt how to stab and lift up a piece of bread with a fork, he held it in the air, cackling with glee, before putting it in his mouth. It would seem that any new effectiveness has to be emphasized, and prolonged through time, in other words to be incorporated into a ritual. In the same way, in adult life, the mere possession of status or accomplishments is insufficient: they have to be demonstrated and ritualized in ceremonies.

A mere momentary appearance of robed dignitaries would be considered not to do justice to the occasion; they have to parade around.

The capacity-exercise theories

To summarize this exercise in induction, it can be said that the behaviour of the child during the day's observation, and the incidents as reported from the following six weeks, fitted the provisional hypothesis. This was that the child continuously appraised his environment for the possibilities it offered of establishing new and progressive relationships of effectiveness. Before, however, we can be satisfied with this explanation of the behaviour in question an alternative hypothesis must be considered. Aristotle (*Nicomachean Ethics*) defined happiness as the exercise by man of his nobler faculties; since this happiness was the natural aim of man it followed that the exercise of certain faculties becomes an end in itself and hence the motivation of behaviour (the limitation to the nobler faculties being incidental to his denial of happiness to any who were forced to work for their living!). This theory of motivation based upon capacity-exercise has recently been re-stated by Nissen (1954) and Woodsworth (1958). Any organism, the latter postulates, has a natural tendency to "deal with" the environment: "any behavioural capacity has its own motivation". This is a seductive theory because it seems so neatly to put an end to further enquiry. And if the perceptual and intellective capacities are included this theory can explain quite a lot of what is here described as effectiveness-behaviour, notably investigatory activities, visual discrimination, grasping of relations of likeness and identity, etc. The development of the child's muscles might, according to this theory, be paralleled by instinctive urges to use them in lifting and moving heavy objects and in locomotion. But it does not adequately explain the progressive demands for new achievements; once a satisfactory type of muscular or intellectual exercise has been discovered, why does it inevitably stale? No such complicated sequences of behaviour are needed for the exercise of most organs. As Nissen himself points out, when muscles need toning up after a period of inactivity or sleep, this is effected by simple reflexes, namely stretching and yawning; no complicated activity-systems are required. Moreover, important organs can habitually lie unused without accumulating frustration. Frustration occurs, not from the inability to use a capacity, but from the inability to perform a task at which success is anticipated; the crossword puzzle addict may rack his brains—thus using his intellectual capacity to the utmost—and yet be frustrated by just one word he cannot supply.

There is a superficial parallelism between the theory of capacity-exercise and the effectiveness-hypothesis as developed in the present study, since effectiveness must depend upon using the organs in ways for which they are adapted. But merely to postulate the need to exercise as a motivation for behaviour implies that the results of behaviour are a matter of relatively indifference. The inadequacy of this theory cannot be better illustrated than in the example which Nissen (1954a) himself takes: "The act of talking is pleasurable in and for itself. There is a drive to talk, just to talk, even among those we do not classify as insane, and regardless of whether the talking conveys information, sells the washing-machine, or impresses the boss into giving a raise." But a talker, even though he is not conscious of his motivation, may

VOL. 2 1961

talk in order to establish relationships of a more subtle order with his listener—to get or remain on a friendly footing with him, to impress or even to belittle. Talking irrespective of any relationship of the talker to his hearers would certainly suggest mental abnormality. The neglect of the relational element in human motivation by Nissen is all the more surprising considering his laudable insistence upon an evolutionary view of behaviour (1958), and in particular his statement (1954a) with regard to the behaviour of animals that "the integrating factor . . . eventuates in consequences which provide near-optimum relations between the organism and its environment". It is self-evident that a creature able to concentrate all its behaviour upon the maintenance of biologically favourable relationships will stand a better chance of survival than one which has to keep itself in good trim by a large amount of random exercise.

It is easy, as a casual observer, to regard a young child's behaviour as containing much random movement; but with increasing age it is seen more clearly to be directed towards objectives (i.e. changes in the relationship between the person and his surroundings). Even those most committed to a behaviourist approach do not deny, for example, that human beings tend to behave in ways which secure personal dominance—that is to say, causing other people to modify their behaviour. Between the ages covered by the diary the child under study did not have much opportunity for exercising this type of effectiveness, but on day 570 he invented, to his great amusement, a game of offering his father something that he himself liked eating, and then pulling it away before the latter could get it in his mouth. A little later he liked to stand barring the way in a passage or doorway by stretching out his arms. Both Köhler (1927) and Hediger (1955) report teasing behaviour in apes: enticing hens to the enclosure and jabbing at them, or squirting water at a human who approached too close. It would be a far stretch to explain such behaviour by the hypothesis of capacity-exercise, and the same applies to display and possession, and the liking for the approval of other people. On the other hand, these are embraced by the hypothesis of the effectiveness-relationship, so that the latter, it is submitted, is the more comprehensive.

Problems raised by the concept of appraisal

Nissen's relational formulation quoted above has only to be taken one stage further—by asking how the organism identifies near-optimum relations—to arrive at a concept akin to that of appraisal. This concept, upon which the hypothesis of the effectiveness-relationship depends, nevertheless contains two difficulties which require consideration. The first is that the relationships appraised are materially intangible or 'psychological'. As psychologists, however, we are beginning to lose our fear of dealing with psychological data (Kelvin, 1956). McDougall would not have had to make important exceptions to his instinct-theory if he had allowed himself to classify behaviour by psychological relationships. But it is necessary to give this term precision if our explanation of behaviour is to be ultimately mechanistic in the best sense. Above a certain level of cerebral development, organisms not only respond to stimuli which offer immediate satisfaction of visceral needs; they recognize certain types of situation as giving them advantages or disadvantages in the satisfac-

tion of them. The status-situation gives priority rights to available food. Being in a position of dominance confers both nutritional and sexual rights as well as possession of territory for breeding. Nissen (1954a) points to the biological advantages of curiosity: "Anyone who has observed mammalian behaviour . . . will realize how great a proportion of activity is devoted exclusively to keeping in touch with the environment, finding out what's going on, keeping informed, getting acquainted with a strange environment or with changes and new objects in a familiar one". The relationships of advantage which the creature seeks to establish, or those of disadvantage which it seeks to correct, have no common perceptual elements. The relationship is one of *potentially* better or worse eating, mating, safety, and so on. The common element is thus an abstraction. This presupposes the ability of the organism to make an appraisal of any given situation in terms of such potential advantages, that is to say, in terms of a general type of relationship between itself and its perceived situation. Since this appraisal, resulting presumably in judgements of 'favourable' or 'unfavourable', must take place at a central level within the creature's brain, it is a psychological event and the relationship with the environment may be termed psychological.

VOL. 2 1961

The second difficulty is that abstract appraisal of the sort considered would seem to imply a greater degree of conscious thought on the part of the animal or infant than is warranted. But however abstract the criterion of appraisal, and hence the relationship appraised, the situation remains a particular and concrete one. A rat sets out to investigate a particular maze, a person wants to finish a particular job, one is insulted by a particular remark. The application of the general or abstract criterion is not performed consciously. There is indeed no reason for believing that abstract thinking is any more conscious than is perception as such. The present writer (Stott, 1950) has argued that 'repression', or mental avoidance of thought-material, is most parsimoniously explained by assuming that all thinking as well as all perception is in the first place unconscious, and that awareness only occurs for special reasons in certain instances. Lashley (1954) argues in similar vein in regard to perception that "there is never awareness of the integrative activity of the brain while it is in progress. . . . Our thoughts come in syntactical form, without effort and without knowledge of how that form is achieved. So in every case, that of which we are aware is an organized structure; the organizing is never experienced." Similarly, in the particular case of the appraisal of a relationship in terms of the individual's control, freedom of action, understanding and so on, there seems no reason for assuming that the mental process must be conscious.

The above does not dispose of the theoretical problems surrounding the concept of appraisal, but they can only be referred to shortly in the present paper. The most obvious of these is how an organism comes to be equipped with such an ability. It is too much to expect that any non-human animal could sum up its experience, even unconsciously, by such generalizations as: "If I bully so-and-so, next time he catches a worm I shall be able to make him relinquish it to me without a fight". We must therefore suppose that, insofar as members of a species strive for general dominance, status or knowledgeability, they are provided with innate 'templates' for making such abstract appraisals. No ethologist would doubt that, say, the defence by a bird of territory or a rat's investigatory behaviour could be based upon anything

other than instinctually provided criteria. This implies that the higher animals can make unlearned abstract appraisals of the nature of "I am on my own ground, therefore I behave aggressively and with confidence" or "I must get to know my surroundings". It is thus just as feasible to postulate innate neural 'templates' for the appraising process as it is to infer such templates for the instinctive recognition of sign-releasers. By common agreement it is no longer necessary to think of instinct as the innervation of specific concatenations of neural impulses aroused by specific afferent stimuli. If the instinctive component of behaviour is defined empirically as the tendency of members of any species to seek to establish and/or maintain certain standard unlearned relationships between themselves and their environment, such a definition holds whether the appraisal is on the specific level, such as a fear of snakes, or on an abstract one, such as fear of being in a strange environment. In either case behaviour can be classified according to its results in terms of relational changes. If in doing this certain regularities are observed, and these cannot have been learnt, it is reasonable to infer that innate 'templates' must exist for them. It goes without saying that the metaphorical analogy of a 'template' will have to be replaced when more is known of the neural counterparts of appraisal.

By classifying observable phenomena, namely the relationships which *result* from behaviour, we avoid the dichotomies and exceptions inherent in any classification by specific 'goals' or 'motives', and can also dispense with hypothetical constructs or intervening variables. It may be countered that the postulate of appraisal is just another intervening variable, with perhaps little to choose between it and the concept of 'drive' to which objection was made earlier. The difference is that whereas 'drive' introduces—without any empirical justification—the idea of an entity or agent, a *deux ex machina*, the process of appraisal is an inductive generalization which would seem to be logically inescapable. In recognizing objects as belonging to the classes of new, dangerous, stronger-than-me, weaker-than-me, an animal must make appraisals of heterogeneous percepts at a fairly central level. Hediger (1955) remarks how elephants "would suffer the most severe disturbance from their fellows without even being wakened up, while they immediately started from sleep at the least disturbance from human beings . . . the incoming stimuli are filtered, so to speak, i.e. divided into biologically harmless ones from members of their own species, and potentially dangerous ones from human beings or other enemies." Adrian (1954) has postulated the same process. "At some stage the complete report from the sense organs must be subjected to an editing which emphasizes the important items and sets the unimportant aside." What the neural counterpart of this editing or appraisal may be is outside the scope of the present discussion, but it is of interest that the process seems to be impaired by prefrontal leucotomy. Petrie (1952) observed that a chimpanzee who had previously been extraordinarily disturbed on making a mistake upon a puzzle box, made more mistakes after leucotomy but displayed great calm. The answers of leucotomized human patients showed a general tendency to be more slapdash, suggesting that less rigid critieria were applied. The great preponderance of afferent over efferent fibre systems of the prefrontal region as demonstrated by Fulton and his associates (Meyer, 1950) is also consistent with its having an appraising function, since appraisal would require the intake of a great diversity of information but the issue of relatively few types of judgement.

SUMMARY

Such behaviour of the writer's son from birth until the age of 18 months as seemed to serve no immediate organic or social end was made the basis for a study of motivation. Five objective criteria of motivation were applied.

The data were first classified into more general statements as to the nature of the relational change which resulted, and these in turn re-grouped into five major abstract changes. The latter were finally summed up in the statement that the child appraised as favourable any change which demonstrated his effectiveness *vis-à-vis* his environment.

The behaviour could only be fully accounted for by postulating appraisal in terms of progressive effectiveness; the child continually sought new modes of effective action, and abandoned a mode once it had been exploited to the point of full mastery.

In order to estimate the importance of effectiveness as a source of motivation the diary was quoted *in extenso* for a day in which the child was allowed to do what he liked with the minimum of interference.

It was shown that the behaviour quoted could not be explained by social conditioning or by the capacity-exercise theory.

The effectiveness-hypothesis requires that young children and certain animals are capable of abstract appraisal of situations by criteria of biological favourableness; the theoretical implications of this postulate were discussed.

VOL. 2 1961

Addendum—Since writing the above article I have had the opportunity of reading the closely reasoned paper by R. W. White entitled "Motivation reconsidered: the concept of competence".* He shows that the 'organic' concept of drive which has dominated learning-theory cannot be made to fit those segments of behaviour comprising exploration, activity for its own sake and manipulation. Since it is evident that such behaviour brings its own satisfactions, that is to say, has its own motivation, we are justified in postulating a general urge towards competence or effectiveness, for which he proposes the name *effectance*. Moreover he stresses that the relationship sought is not a static level of competence, but "a continuing transaction which gradually changes one's relation to the environment", likening this to Hebb's "difference-in-sameness".

In short, there is so close a parallelism between his argument and mine that it would not be possible for me to make adequate reference thereto without recasting the whole of my article. Nevertheless it is my hope that mine will still prove of some interest as an independent inductive confirmation of his thesis upon hitherto unpublished data; and whereas our conclusions are so similar they are in places differently formulated.

It is of some epistemological interest to ask why both articles should have been written within a year or so of each other. In my case the diaries had been put away for some 14 years, owing to more pressing research interests, and it was the reading of Woodsworth (1958) which prompted me to write up their early section.

Although only aware of having made the definitive formulation of an 'effectiveness-relationship' within the last two years, I have been surprised to find a reference thereto in the index of an earlier work,† the actual phrase running, "that other major psychic need, which also operates from earliest childhood—namely of establishing a relationship of effectiveness (some might say dominance) within our environment." At this time, however, I generally used the term, borrowed from Aristotle, of 'self-realization relationship'. This concept is defined (pp. 394-5) as "a desire to count for something, to gain recognition, to operate effectively within the environment and not to be pushed hither and thither by external forces". In a footnote on the latter page it is suggested that if an innately given

Psychol. Rev.* **66, 297–333, 1959.

†STOTT, D. H. (1950) *Delinquency and Human Nature*. Dunfermline, Carnegie United Kingdom Trust.

relationship-need of this character is recognized, the anthropological evidence of Benedict, adduced to demonstrate the multiplicity of human instincts, can be used to demonstrate a basic simplicity and universality of motivation in ostensibly very discrete behaviour.

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APPENDIX

Record for day 507

Nov. 6. At breakfast, after finishing his porridge, he was given a few small squares of bread on a plate. Up to two days ago he would put these in his mouth with his hand, but now he insists on having a spoon, although he cannot manipulate it properly yet. He chases the piece of bread round the plate and tray of high chair until eventually he gets it on spoon. He put one or two pieces in his mouth, dropped others on floor in attempt, but not being hungry he invented the game of getting the pieces from the chair tray with spoon and tipping them on to plate. He constantly made as if to help bread on to spoon with his left hand, but always just refrained from doing so. (About 10 days ago he used to place bread in bowl of spoon with left hand.) When I advanced my finger to push bread into spoon, he pushed it away. From time to time the plate was lifted up in the search for a bit of bread, so that the bits already on would be tipped off. He took about 2–3 min to get each piece of bread on plate, and he continued for about 15 min. Eventually, when a piece got stuck in the corner of the

tray he got cross with it, and started hitting at it wildly. He was then lifted down. He walked into passage and lay on floor for a minute or so, then sat with back against cupboard door, meanwhile making a cackling noise. He then got on all fours and put his head on ground, enabling him to look between his legs. (His mother then took him upstairs to pot him.)

8.45–9.00. Stayed with friend of wife's who called to go out with her. As soon as I came in house from outside he attached himself to me, from time to time peering through door at friend. Pulled about small truck a few times, but not really keen.

9.00–10.30. Watched me clear out ashes from coke-boiler. Very amused at seeing me put hand-brush underneath stove to sweep out ashes. Pushes pram up and down kitchen about three times. Watched me clear out grate of living-room. As I pick up a piece of half-burnt coal and replace in grate he seizes another piece and puts in grate also, and tries to do the same with other pieces. After I have swept grate with hand-brush I leave it with him, and he imitates me. He even tries to push brush underneath fire-grating as he had seen me do to coke-boiler. To distract his attention from fire-laying I gave him a women's magazine. He sat on floor and turned over pages. Every time he found pictures of people he would make a gleeful cackle (a short sharp "A! A! A!") and gaze at picture. As he is sitting next to copper teapot in grate he advances hand to take off lid but withdraws it as soon as he touches it (knowing this is forbidden. He cannot seem to remember not to do a thing until he actually starts to do it. It is the same with pulling down books and opening drawers.) But as I give no warning "No" he picks off lid and replaces it. This he does only three times. He can now put the lid on with practically the same certainty as a grown-up. A month ago he would make several false movements and misses, and would amuse himself for quite a long time putting on and taking off lid. He then found a small bottle, into which he stuck his finger and walked about a bit thus, or pulled out finger and pushed it in again. He then came out with me into kitchen while I washed up. He pulls out frying-pan, cake-tins, and wire-mesh cake-trays from under gas-stove and strews them on floor. The wire trays interest him greatly and he handles them for a time. (Appreciative noise all the time.) Picked up two flat sponge cake-tins and banged them together. Liking the noise he repeats this, then marches up and down kitchen and passage banging them like cymbals, meanwhile cackling gleefully. Occasionally he drops one, which makes a great clatter. But he picks it up again and resumes his cymbal clanging. Then I notice that he is dropping one purposely, making a most satisfactory row. He picks it up and drops it repeatedly then throws it down harder, then across kitchen floor. He must have thrown about thirty times.

Tiring of this he starts pushing frying-pan along on floor. (This is too big to be thrown.) Next goes to saucepan-cupboard, pulls out small saucepan and very large lid, and tries to make lid stay on saucepan, getting cross when he fails. Then pulls out another saucepan with correct lid, makes it fit and holds up pan with lid for me to see, chuckling with satisfaction.

After about 4 min at saucepan-cupboard goes to preserve-store and starts fiddling about furtively, and pulls out one or two articles (until stopped).

Returned to wire-mesh trays and walks and treads about on one. Walks to the other and does the same, then back and forth to one and the other about four times. He makes appreciative noises as he stands on it and raises his feet, very much like a cat on a cushion. (Trays have small feet to raise them off table, so that they give and are springy when trodden on.) (10.30–12.50 slept in cot.)

Set in high chair straight from sleep, ate most of first course without wanting any other activity, not even demanding to feed himself. Did not finish his own dinner, but asked for some of mine. Gave him some of my fried potato in his spoon, putting it on tray of high chair expecting him to lift spoon to mouth. But he picked it out of spoon and put in his mouth with finger. Could not get him with subsequent bits to lift spoon to mouth.

Gave him a little stiff rice pudding in bowl with spoon. No attempt to eat it. Just poked about, quite enjoying himself. I gave him a taste with another spoon, then he lifted some in his mouth himself. From then on, while I fed him with the other spoon he got some on the spoon and fed himself with several spoonfuls. In so doing he cured himself of the two mistakes which had prevented him from feeding himself before, namely he now kept the spoon the right way up and pushed the tip into his mouth first. Whenever quantity on plate got low he pointed to dish for more, until dish was empty and he had eaten large quantity. Towards end he was feeding himself quite rapidly, whereas

VOL. 2 1961

at the beginning he only lifted spoon to mouth about once a minute. It seemed as if he had been discouraged by his earlier failures. As each spoonful was successfully delivered he would look at me and snigger.

After the pudding I offered him remains of his rose-hip in a glass, but he rejected it. But when I placed glass on tray he immediately lifted it up himself and drank some. (He has not done this before. Attempts made a few weeks ago to get him to lift glass himself but given up as unsuccessful.) Now he repeatedly lifts glass to his mouth and puts it down, but not being thirsty he does not drink any, or at most has a sip. When I try to tip up glass so that liquid will reach his mouth he pushes my hand away, as if he wanted to do it by himself. I take him into kitchen to wipe his hands. The chair he is leaning against moves accidentally, whereupon he pushes it about five feet until it is against wall in front of door (not usual place).

He comes with me into sitting-room, fumbles with daily paper for a moment and coming up to me, where I am writing notes, demands my pen-stand. He is not allowed otherwise to have this, but in interests of science I give it to him. He takes it over to fire, examines it for about ½ min, then abandons it in favour of a small stick about length and thickness of a pencil, which had been left lying in hearthrug from laying fire. He walks over to sister's desk, sticks it in the inkwell hole, scrapes settee seat with it. A moment later and I heard loud gurgles and booings of triumph. He was holding the pen-stand with the stick placed in the trumpet-shaped pen holder, just as if it were a pen. He marched about making a continuous googling rah-rah-ing noise. Then when the stick fell out or he pulled it out he would put it in again. Once, when the funnel was pointing downwards, he repeatedly tried to make stick remain in (not understanding why it should fall out) and finally held stick and carried the holder about on the end of it. This gave him special pleasure, but he did not repeat this method. While I washed up, he continued the game of putting stick in the funnel. The googling and other noises were so continuous that I could tell whether he had the stick in the funnel or was trying to get it in. During the latter phase he was absolutely silent except for heavy breathing and an occasional squeal of frustration. (The funnel is on a swivel and often got in the wrong position.)

After just over 15 min he saw small cut-out of a man on floor about two inches long (done by his sister). He put down pen-stand and stick and 'loved' the paper cutting, putting his face against it as it lay on ground and making his 'loving' sound of "Ah!". Then picked it up and fingered it for a moment. Then picked up pen-stand again, held it for a moment and rejected it.

He walked about kitchen on look-out for some new activity, seized oven door-handle and shook it. It came open. He did not know what to do for a minute, and looked at me as if expecting a "No". When I took no steps to prevent him he closed door, opened again, peered inside. For some 8 min he did this, closing and opening nine times at this time, fingering the inside. Finding eventually that the shelves were movable he shook them, pulled them out an inch or two and slammed them back. Did this for some 3 min, meanwhile googling with enjoyment. Also found bottom plate was movable, so pushed it back until it got jammed.

Then noticing cake-tins, pulled them out again, this time choosing two square flat ones, that he had not played with before. Tried to put one in oven, but failed and attempt not repeated. After 5 min on these, he went back to oven again and seized a shelf. It came right out (loud "rah rah, google-oo-do"). Threw it on floor in middle of kitchen, went and fetched second and threw it beside them. Banged them together and walked and stamped on them. Oven space now empty, he tries to climb inside (prevented by me in interests of cleanliness).

He then sits on floor examining a small irregularly-shaped cut piece of paper, in silence.

Came with me into sitting-room. Pulled daily paper about for a moment. I opened his toy-box for him. He pulled out a rag doll and brought it to me, but in ½ min it was discarded. Sat on settee for 3 min looking at pictures in magazine, cackling "Ha, ha, ha" on finding pictures of people. Then began to tear bits off and then tear pages out (another 3 min). Then looked and tore alternatively for some 10 min more. During this time he made 3 attempts to stand on settee. Each time he got up a cackle of triumph. When I told him sharply to sit down (fearing he would fall) he did so, but quite visibly sulked for a ½ min or so. (Lowering head and pouting.) Then lay on his back on settee and resumed tearing in a desultory fashion. As he was obviously tired I put him to rest again. (2.40 p.m.)

3.35 p.m. Fetched him and took him in pram to meet sister from school. In pram he was entirely occupied in looking at things. The most he did physically was to peer round hood of pram. He hardly moved his feet and did nothing with his hands.

While I was getting tea he walked up and down back path with sister and played inside with her.

At tea, after first hunger satisfied, he demanded plate and pointed to spoon. I cut up bits of bread and honey into small squares, but he just played aimlessly with them for about 10 min, pushing them about with spoon. Then he got one on spoon and ate it. Next he put two on spoon at once, laughed and showed sister and me. Tried to load a piece of biscuit on as well, but failed. Ate two bits of bread and finally ate all squares, putting them in mouth either with spoon or fingers.

After tea watches me rake coke-boiler, then discovers coal-hammer which he carries into passage and dining-room, stopping every few paces to thump it on floor and back into kitchen and more thumping.

Watches me re-make sitting-room fire. Seizes fireguard, which I had put on rug behind me, and tried to put it in front of fire. When prevented he walked on it, etc., for a minute or two, then, discovering it had a handle, dragged it two or three times round the room. Finally I take it from him and place in front of fire. He seizes hearth-brush and starts brushing copper teapot. A minute later find him sucking end of poker, which he has taken from coal-bucket. I take it from him and replace in coal-bucket. He fiddles about with it and the other fire implements for a minute or two but not daring to take them out. Then seizes fireguard from in front of fire and starts away with it (prevented).

VOL. 2 1961

Picks up small bottle, puts finger in, or bottle in mouth. A minute later he is walking round the room with the bottle in his mouth and the hearth-brush in his hand. This combination seems to please him, as he walks about thus for a minute or so, taking out bottle from mouth and replacing it every now and then. (At this point his mother came back and we all go to welcome her.)

While sister and I sit on settee a few minutes later he takes women's magazines one by one from low table and brings them to settee.

Suddenly he climbs up on settee, pushes behind sister, forces his way between us and sits down contentedly, although tries half-heartedly to push sister away. (Taken to bed.)

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THE GROWTH OF THE CONCEPT OF VOLUME IN JUNIOR SCHOOL CHILDREN

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1. INTRODUCTION

Piaget, Inhelder and Szeminska (1960, p. 358) have described an experiment in which a child is shown a set of 1 cm metal cubes which are then put at the bottom of a partly filled bowl of water. The experimenter builds a block out of 36 cubes (say, $3 \times 3 \times 4$) while the subject notes how the level of the water rises in the bowl. The child is asked if he thinks the level will change if the arrangement of the cubes is modified (to, say, $2 \times 3 \times 6$). In fact, the subject is questioned about the conservation of volume inside the 36 cubes, i.e. internal volume; about volume as occupied space; and about complementary or displacement volume, i.e. the change in the level of the water in the bowl.

Lunzer (1960), using a procedure very close to that of Piaget, studied the understanding of volume in 24 children ranging in age from 6 to 14 years. Many of the findings of Piaget were completely borne out, but Lunzer did not confirm that the notions of infinity and continuity are necessary before the child can calculate volume in terms of linear dimensions, or before he can grasp the conservation of displacement volume. In the experiment now to be described there were alterations in the procedure that yielded findings that were not brought out either in the work of Piaget or of Lunzer.

The concept of physical volume, embracing the three aspects noted above, is an extremely important one for teacher and child. The latter will make many errors in certain problems in science if this concept is not well developed.

2. PROCEDURE

(a) *Apparatus and General Technique*

Apparatus. Twenty-five plastic cubes (dice) of side $\frac{7}{8}$ in (2·22 cm); these will be referred to as bricks when questioning the child. A 1 gal (4543 ml) can and a 1 pint can (568 ml), both of these being standard measures found in a primary school.

Technique. A selection of the main questions is given but it must be stressed that supplementary questions were often asked if a point needed elucidating. Each child was questioned individually in the headmaster's room so that no child witnessed the interrogation of another.

Part 1. Internal volume

Twelve cubes were presented as a block arranged as $2 \times 2 \times 3$ (the last figure always represents the height), and another 12 in a block $2 \times 2 \times 3$ (See Fig. 1a).

Question (i): "Here we have two blocks of bricks. If we made two boxes, one for

each block of bricks, so that there was just enough room in each box to hold the bricks, would there be as much room in one box as in the other? How do you know? [or] Why?"

One block of cubes was then rearranged as 1 × 2 × 6 (See Fig. 1b).

Question (ii): "If we make another box with just enough room in it to hold this block of bricks [1 × 2 × 6], would that box have the same amount of room in it as this box [2 × 3 × 2]? How do you know? [or] Why?"

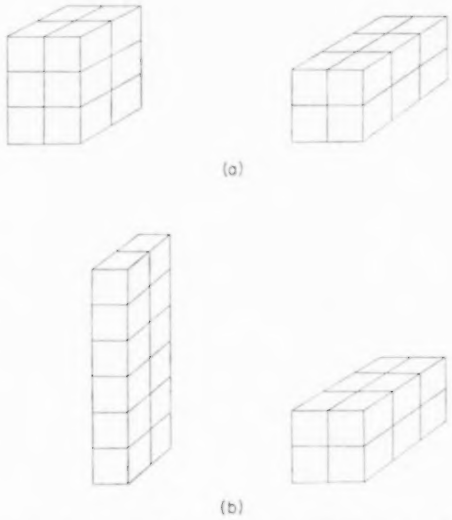

FIG. 1. Experimental arrangement of blocks.

Part 2. Occupied volume

The child was shown the pint can and the gallon can, with the '1 pint' and '1 gallon' marks on the can clearly in view. Moreover, the child was told the amount of water held by each can. The pint can was then filled to the brim with water.

Question (iii): "Before we fill this can [1 gal] with water we are going to put some bricks in like this. [The block 2 × 3 × 2 is placed in the gallon can.] If we now fill this can to the top do we still get the same amount of water in as before, or do the bricks make a difference? How do you know? [or] Why?"

The block 2 × 3 × 2 was then removed from the gallon can.

Question (iv): "Suppose we put this block [1 × 2 × 6] into the 1 gallon can. Are we able to get as much water into the can now as we could with this block [2 × 3 × 2] in the can?"

The questioning was pursued at this point to ascertain if the amounts of water that can be poured into the can are independent of the arrangements of the cubes, provided that the number of cubes remains the same. The subjects were also asked the reasons for their answers.

Part 3. Complementary or displacement volume

The pint can remained full of water. All the cubes were removed from the gallon

VOL. 2 1961

can and placed on the table. The experimenter said, "Let's pretend that the gallon can is full of water right to the top just like the pint can, and that I place this block of bricks [2 × 3 × 2] very carefully into the gallon can so that there is no splash." The cubes were lowered very carefully into the gallon can and Question (v) asked.

Question (v): "Is it possible to put the bricks [2 × 3 × 2] into the pint can very carefully without spilling any water? Why do you give that answer? [or] Why?"

Those pupils who answered Question (v) correctly were asked:

Question (vi): "What happens if you place these bricks [1 × 2 × 6] in the pint can instead of these [2 × 3 × 2]? What do you know about the amounts of water spilt over? Why do you give that answer? [or] Why?"

Part 4.

Each child was questioned as to whether any water would spill over if just one cube was lowered into (a) the full pint can, and into (b) the full gallon can. If the replies to these two questions were correct, the child was asked if the amounts spilt would be the same. Some children denied that water would be spilt from the full gallon can but thought that it would be spilt from a full pint one.

Part 5.

Every child who maintained that the amounts of water spilt were the same, when replying to Question (vi), was asked to compare the amounts of water spilt if (a) a cube used in the experiment, and (b) a cube of exactly the same size and shape but made of lead, and therefore much heavier, were lowered into the full pint can. The question was put in respect of the full pint can rather than the full gallon can since more children thought water would be spilt by one cube being immersed in the former.

(b) *Subjects*

There were 191 junior school pupils from a North of England town involved in this investigation. Of these 51 were first, 40 second, 45 third and 55 fourth-year children. It is likely that the sample is not entirely representative of English children in general, and it is possible that in other areas of the country a somewhat greater proportion of junior school children with a well-developed concept of physical volume would be found.

3. RESULTS

Part 1. Internal volume

TABLE 1. NUMBERS OF CHILDREN GIVING CORRECT REPLIES TO QUESTIONS (i) AND (ii)

Year	Number of children	Q (i): Box for 2 × 3 × 2 block the same size as box for 2 × 2 × 3 block	Q (ii): Box for 2 × 3 × 2 block the same size as box for 1 × 2 × 6 block
1st	51	44 (86%)	33 (65%)
2nd	40	35 (87%)	27 (67%)
3rd	45	44 (98%)	41 (91%)
4th	55	55 (100%)	51 (93%)
	191	178	152

TABLE 2. NUMBERS OF CHILDREN GIVING VARIOUS REASONS FOR CONSERVING INTERIOR VOLUME IN QUESTION (ii)

Year	Number of children	Quantity	Identical action	Compensatory relations	Plus/minus	Reversibility	No clear reason given
1st	33	21 (64%)	3	6	1	0	2
2nd	27	19 (70%)	2	5	1	2	1
3rd	41	30 (73%)	5	6	–	1	–
4th	51	33 (65%)	4	3	3	2	2
	152	103	14	20	5	5	5

The headings in Table 2 are defined as follows:

Quantity—Subjects relate the amounts of room in the two boxes to the quantities of cubes which remain unchanged.

Identical action—Subjects say, in effect, that the remaining 2 × 3 × 2 block could be rearranged as 1 × 2 × 6.

Compensatory dimensions—Subjects say, essentially, "This would be a fat box but that would be a big thin one".

Plus/minus—Subjects maintain that cubes have been neither added nor taken away.

Reversibility—Subjects say that the 1 × 2 × 6 block could be changed back to a 2 × 2 × 3 block.

Table 1 clearly shows that when junior school children compared a 2 × 3 × 2 arrangement of cubes with a 2 × 2 × 3 arrangement, almost all recognized that the interior volume was the same in both instances. It cannot be assumed, however, that they necessarily counted the number of cubes in each block; they appeared to observe general likenesses and concluded that the number must be the same. But when the arrangement 2 × 2 × 3 was changed to 1 × 2 × 6 perceptual differences become greater, and then only some two-thirds of the first and second year pupils, and nine-tenths of the fourth year pupils, conserved internal volume. It is possible that these figures would not have been as high if the number of cubes used had been greater.

From Table 2 it is clear that almost three-quarters of the conservers of internal volume in Question (ii), related the amounts of room in the two boxes to the quantity of cubes which remains unchanged. A few children pointed out that a 2 × 3 × 2 block could be rearranged as 1 × 2 × 6, and a few referred to dimensions that compensate for one another.

It is possible that part of the discrepancy in the proportions of correct answers to Questions (i) and (ii) is due to the fact that the answers to Questions (i) were derived from comparing two static situations. For Question (ii), however, one block was seen by the child to be rearranged, and it is feasible that the mere movement of the blocks suggested for some children a change in internal volume.

Of those children who did not conserve interior volume in Question (ii) the

VOL. 2 1961

most frequently given reason for the inequality of the size of the boxes related to dimensions; e.g. "This box will have more room because it is taller".

Part 2. Occupied volume

TABLE 3. NUMBERS OF CHILDREN WHO CORRECTLY REPLIED TO QUESTIONS (iii) AND (iv)

Year	Number of children	Q (iii): Could not get as much water in gallon can with 2 × 3 × 2 block in it	Q (iv): Could get the same amount of water in gallon can with 1 × 2 × 6 block as with 2 × 3 × 2 block in it
1st	51	33 (65%)	20 (39%)
2nd	40	29 (72%)	24 (60%)
3rd	45	29 (64%)	25 (56%)
4th	55	49 (89%)	46 (84%)
	191	140	115

TABLE 4. NUMBERS OF CHILDREN GIVING VARIOUS REASONS FOR STATING THAT THE QUANTITY OF WATER IN THE GALLON CAN MUST BE LESS IF CUBES ARE PLACED IN THE CAN

Year	Number of children	Bricks taking up room or essential variation of this	The weight of the bricks will push the water out	Inversion: "If bricks in last, water will spill out"	No clear reason
1st	33	20 (61%)	4	2	7
2nd	29	25 (86%)	1	–	3
3rd	29	23 (79%)	3	1	3
4th	43	43 (100%)	4	2	2
		111	12	5	15

It seems likely that the relative sizes of the can and block of cubes are important in relation to Questions (iii) and (iv) and this must be remembered when considering the responses. Using the present apparatus it seems that something like two-thirds of first year and nine-tenths of fourth year junior school children realised that after inserting a number of cubes in a gallon can there is less room in the can for water. But not until the fourth year do some 80–90 per cent of junior school children grasp that the presence of the cubes reduced the capacity of the container, *and* that a mere rearrangement of the cubes made no difference to the amount of water that could be put into the can. It must be stressed, however, that had the relative sizes of the object immersed and the container been changed, the number of children giving correct responses at the various ages might have altered somewhat.

Roughly, three-quarters of those who correctly answered Question (iii) said, essentially, that less water could be put into the can because the cubes took up some room. These saw the problem in terms of occupied space. But 12 pupils thought that the weight of the cubes was a determining factor, in the sense that for them water had

to be squeezed 'out' or 'up' so that a heavy block would exclude more water than a light one. Five children anticipated Part 3 by saying that if the bricks were put in last the water would spill out, while 15 gave the correct answer but could not say why.

An examination of the replies of doubtful or incorrect replies to Question (iii) showed that 8 pupils were uncertain of the effect of introducing the cubes into the 1 gal can, and 43 said they would make no difference to the capacity of the container. Of the 43, 27 could give no reason, while 16 said that the water would get 'in the cracks' or 'under the bricks' or something similar. Thus when children do not understand the relevant factors involved in a physical problem it looks as if they select, as causal agents, plausible elements which happen to strike them.

Table 3 shows the number of correct replies to Question (iv), when the subjects had to compare the amounts of water that could be poured into the 1 gal can with a $2 \times 3 \times 2$ and $1 \times 2 \times 6$ arrangement of cubes. Of the conservers 60 (52 per cent) maintained that the quantities of water were equal, "because there is the same number of bricks" or "the same amount of bricks", and 31 (27 per cent) stated that the two blocks of cubes took up the same space. There were a number of other reasons proposed, but each was given by only very few subjects. An examination of the protocols also revealed that an understanding of interior volume was usually necessary before occupied volume can be understood.

VOL. 2 1961

Part 3. Complementary or displacement volume

TABLE 5. NUMBERS OF CHILDREN WHO MAINTAINED THAT AN OVERFLOW OF WATER IS INEVITABLE (QUESTION (v)), AND CONSERVED THE AMOUNTS OF WATER SPILT WHEN THE BLOCKS WERE REARRANGED (QUESTION (vi))

Year	Number of children	Q (v): Overflow of water inevitable	Q (vi): Conserves the amounts of water overflowing with $2 \times 3 \times 2$ or $1 \times 2 \times 6$ block
1st	51	45 (88%)	28 (55%)
2nd	40	37 (92%)	23 (58%)
3rd	45	43 (95%)	32 (71%)
4th	55	54 (98%)	43 (78%)
	191	179	126

This table indicates that using the present apparatus, almost all junior school children knew that a displacement of water was inevitable when a number of cubes was placed in the full gallon can. When asked about their reasons for their replies to Question (v), 90 (48 per cent) said that "the bricks take up a lot of room" or something similar; and 73 (38 per cent) said that "the heaviness of the bricks makes the water come up", or something essentially similar. Once again it seems that weight of the cubes is a relevant factor for some children. A few pupils each gave a number of other reasons, while 18 knew that water would be spilt but could not say why.

Table 5 also shows that roughly one-half of the first year and three-quarters of the fourth year children could conserve the amount of water displaced when a

$2 \times 3 \times 2$ block was exchanged for a $1 \times 2 \times 6$ block. Of these conservers 77 (60 per cent) said that the amounts of water displaced were equal "because there's the same number of bricks in each block" or something similar; 36 (29 per cent) thought the amounts displaced were equal because both blocks weighed the same; and 23 (19 per cent) said that the blocks "take up the same room" or made a similar response.

Part 4.

The following are the numbers of children who maintained that water would be spilt if just one cube was lowered very carefully into a full pint can: 35 (69 per cent) first year, 28 (70 per cent) second year, 38 (84 per cent) third year, and 49 (89 per cent) fourth year pupils. Table 6 indicates the numbers of children giving various replies when asked to compare the amounts of water spilt if a single cube was immersed in a full gallon and full pint can.

TABLE 6. NUMBERS OF CHILDREN GIVING VARIOUS REPLIES WHEN ASKED TO COMPARE THE AMOUNTS OF WATER DISPLACED IF A SINGLE CUBE IS IMMERSED IN A FULL PINT AND FULL GALLON CAN

Year	Number of children	Same amount of water displaced	More water displaced from the pint can	More water displaced from the gallon can	Uncertain
1st	51	11 (22%)	23 (45%)	4	13
2nd	40	11 (28%)	13 (33%)	2	14
3rd	45	20 (44%)	15 (33%)	4	6
4th	55	32 (58%)	21 (38%)	0	2
	191	74	72	10	35

It appears that not until the fourth year of the junior school do 50 per cent of pupils realize that the amount of water displaced by a single cube is independent of the size of the full container within the limits set by the apparatus used.

Part 5.

TABLE 7. NUMBERS OF CHILDREN WHO CONSERVED IN THEIR REPLIES TO QUESTION (vi) GIVING VARIOUS ANSWERS ABOUT THE AMOUNTS OF WATER DISPLACED BY TWO BRICKS OF THE SAME SIZE AND SHAPE BUT DIFFERENT WEIGHT

Year	Number of children	Same amount of water displaced	More water displaced by heavier cube	Uncertain
1st	28	6 (22%)	20 (71%)	2
2nd	23	9 (39%)	11 (48%)	3
3rd	32	8 (25%)	19 (59%)	5
4th	43	23 (53%)	16 (37%)	4
	126	46	66	14

The figures in Table 7 show that the number of children who thought that the weight of an object completely immersed affected the amount of water displaced, decreased with age, but even in the fourth year, only about half understood that the amounts of water displaced were the same.

4. DISCUSSION

Taking the evidence as a whole it seems as if the concept of physical volume (which embraces interior, occupied and displacement volume) develops slowly during the junior school period, and it is unlikely that any single test will decide if a child fully understands it. If we take success in all the tests that have been described as the criterion of 'formal thought' in respect of physical volume, then the numbers of children who satisfy our criterion are: first year, 3; second year, 5; third year, 5; fourth year, 21. It is clear that an understanding of physical volume does not, in present circumstances, develop until late in the junior school stage, and even then many children will have gaps in their understanding. Broadly speaking our evidence supports Piaget *et al.* as regards their stages, although we differ concerning developments within stages.

VOL. 2 1961

In the development of this concept, as in the growth of other concepts, the child has to learn to eliminate irrelevant factors. This is a slow business.

It is possible, but not certain, that children could learn more quickly about physical volume by being exposed in school to learning situations where the effectiveness of the relevant and non-effectiveness of the irrelevant variables could be made evident in the same experiment. It seems that Piaget *et al.* are optimistic if they think that the single test, in which they employed 36 unit cubes in a bowl, will enable them to disginguish between those who have developed a complete concept of physical volume from those who have not.

Our evidence does not deal with the problem of the calculation of volume as a function of length, breadth and height. Piaget *et al.* (1960) are of the opinion that the ability to understand this calculation depends upon the child having developed the notions of infinity and continuity. Lunzer (1960) does not agree and thinks that a grasp of these ideas is held to be necessary for the sake of Piaget's theory, which demands the priority of topological concepts over Euclidean ones in child development; he thus casts doubt on a theory that has already been called in question by Lovell (1959).

It may well be possible to measure space inside, or space taken up by, a cube or cuboid before the concept of physical volume becomes well developed. Indeed, teaching a child to calculate volume may well focus his attention on conservation of both interior and occupied volume, providing a good teaching method is employed. It is certain, however, that a child who has not attained a well-developed concept of physical volume cannot employ operational thinking in relation to, say, Archimedes' Principle, or problems of density. In these instances his thinking may lead him into many errors and inconsistencies.

5. SUMMARY

One hundred and ninety-one junior school children were questioned, individually, about various aspects of volume, the general form of the investigation following on

from the work of Piaget *et al.* It has been shown that the concept of physical volume which embraces interior, occupied and displacement volume, develops slowly during the junior school period. Piaget is undoubtedly correct when he maintains that it is not until 11–12 years of age that a well-developed concept of physical volume is attained.

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SCHOOL VISITS: THE ROLE OF PHANTASY

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VOL. 2 1961

INTRODUCTION

It is generally accepted that an educational psychologist in the service of a local authority should spend a considerable proportion of his working time in visiting schools. But whereas such fields of activity as mental testing and remedial teaching have acquired sizeable literatures, little appears to have been written about the educational psychologist's work with teachers. This paper follows the usage of the Underwood Report (H.M.S.O., 1955, p. 103) in restricting the term "educational psychologist" to "psychologists who work in child guidance clinics or school psychological services or both and are mainly dealing with individual children".

Five types of activity, in which psychologists and teachers co-operate in the course of school visits, will be differentiated. Then an attempt will be made to describe some of the unconscious anxieties which are stirred up by participation in each of the activities, and the defence mechanisms which are employed to deal with them. This description makes use of concepts derived from psycho-analytic theory, in particular from the work of Melanie Klein (1948, 1957).

CO-OPERATIVE ACTIVITIES

(1) *Psychological testing of children*

In a school psychological service it is customary for children to be tested in school. It is not usual for teachers to take an active part in the test interviews. Occasionally a teacher is present during a psychologist's interview with a very young, handicapped or disturbed child. A teacher may also on occasion sit in on a test interview in order to learn something of psychometric techniques. The head teacher is usually involved in the provision of accommodation for the testing, and other members of the school staff may have to alter their usual teaching programmes to make room for the psychologist. The head or class teacher may introduce the psychologist to the child, escort the child to the testing room, etc.

(2) *Interviews with parents*

Parent interviews are sometimes conducted in school. This is another sphere in which the psychologist normally takes a more active role than the teacher. Usually, however, there is some discussion between the psychologist and the head teacher about the method of inviting parents to the school, timing of interviews and choice of room. A head or class teacher is sometimes present for part of a psychologist's interview with a parent.

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(3) *Exchange of information*

In areas where cases are referred directly by the school to the psychologist or the clinic, one or more teachers will probably wish to give the psychologist a verbal account of the referred child's behaviour in school. The psychologist who works in a child guidance clinic is often asked by his colleagues to make a school visit and provide a report for circulation before the diagnostic interviews. The outcome of diagnostic investigations may in turn be communicated verbally by the psychologist to the school staff. Verbal exchanges of this kind are obviously valuable supplements to written reports, but it should be remembered that they have their own limitations. Teachers may have difficulty in observing and reporting in detail the behaviour of children in school. They may also, through ignorance of psychometric procedures or diagnostic classifications, find it difficult to understand psychological and psychiatric reports. They may find that these reports do not answer the questions which seem most important in the school setting. In his turn the psychologist may not feel free to reveal certain information about the background or history of a case which might help the teacher to understand more fully the child's behaviour difficulties in school.

(4) *Discussion about therapeutic action*

It is obviously arbitrary to make a distinction between this activity and (3) above. Some opinions on therapeutic action are likely to be expressed before the diagnostic procedure is far advanced. The psychologist hopes that, as a result of his discussions with the teaching staff, the school will be able to help the child better, and to co-operate with the clinic team in his interests. He is aware that the school may only be able to offer minimal co-operation, e.g. by permitting the child to leave the class to attend psychotherapeutic or remedial teaching sessions. In other circumstances some adjustment of the school environment, such as transfer to another class or modification in the attitude of the class teacher, may be hoped for. Again, a school may be asked to admit a child with special difficulties, to retain a troublesome pupil until a more suitable placement is secured, or to co-operate in the transfer of a pupil to another school.

Although the psychologist again takes the initiative in this activity, it is surely important that the discussion should be a genuine exchange. Teachers will then feel freer to admit when need arises that they cannot co-operate in the way that the clinic or the psychologist thinks appropriate, and will have an opportunity to make counter-proposals. These may sometimes reveal a failure on the part of the teachers to understand the child's problems, and will give the psychologist the opportunity to clarify the diagnostic findings. The counter-proposals may, however, take into account factors in the school situation which had been overlooked in the original recommendations by the psychologist. In such cases it is clearly desirable to give them serious consideration and, where possible, to arrange for further discussion.

In my view, a greater degree of co-operation is likely to be obtained from the school through exchanges of this sort than through explicit advice given by the psychologist to the teachers. It has been frequently demonstrated that 'active' learning based on induction is more effective than the assimilation and application of ready-made formulae. Moreover, it has been shown by Lewin, Lippett and

White (1939) that democracy is the best social climate for creative group work. Further special difficulties inherent in advising teachers will be referred to later in this paper.

(5) *Preventive and educational work*

The current emphasis on preventive work in mental health has imposed added responsibilities on the child guidance service. As the educational psychologist is the "main link with the schools", (H.M.S.O., 1955, p. 45) he is expected to participate in the education of teachers in this field. It is outside the scope of this paper to consider such lectures, seminars, etc., as the psychologist may be asked to contribute to courses organized by local authorities. These events are not usually combined with the orthodox school visit. This is probably fortunate, since the psychologist's role in school visiting as described above is so far removed from the lecturer's role that abrupt transitions from one set of activities to the other in the same school would be very difficult for the psychologist and the school staff.

VOL. 2 1961

The chief contribution which the educational psychologist makes to mental health education arises indirectly from his discussions with teachers about individual children. By the interest he shows in teachers' reports on individual and group behaviour in the classroom, and by the questions he asks, the psychologist may be able to stimulate more careful observation of children's behaviour. His accounts of psychological and psychiatric interviews may supply the teachers with new means of interpreting what they themselves have observed. The importance which a child guidance clinic places on work with parents may encourage teachers to acquire a more holistic view of children's problems.

Interesting developments have taken place recently in the use of small groups in teaching about human relations. Psychologists and other child guidance workers have participated in intensive work of this kind with groups of teachers. Two such groups are described in recent issues of the *British Journal of Psychiatric Social Work* (Smith, 1957, and Isaac, 1958). These groups have both a therapeutic and an educational function, for their aim is not only to increase the teachers' intellectual understanding of children's difficulties but also to deepen their insight into their own feelings towards their pupils. I would agree with N. H. Isaac (1958) that participation in this kind of group is likely to be of special value to teachers whose work makes heavy demands on their emotional resources, e.g. teachers of mentally subnormal, physically handicapped or maladjusted children. Group work of this kind has been carried out with complete teaching staff units, but it would probably be necessary for the child guidance workers to establish good individual relationships with several individual staff members before such groups could function effectively. Intensive work of this kind cannot be the major activity of a psychologist who has responsibilities to a large number of schools. Moreover, it requires casework skills, in which many psychologists feel themselves painfully deficient. It would, however, be regrettable if psychologists did not venture into this field, not only because their teaching experience and knowledge of the educational system enable them to make a special contribution, but also because participation in such groups must surely increase the psychologists' understanding of teachers' problems and thus augment the effectiveness of all their contacts with schools.

ANXIETIES AND DEFENCES

Before attempting to describe the interplay of unconscious forces which in my view underly each of the activities described above, I shall consider some unconscious anxieties which psychologists and teachers are apt to bring to school visits. For the sake of clarity it will be hypothesized that an educational psychologist is making his first visit to a school which has had little or no previous contact with child guidance workers, but which has now referred a child to the clinic. The less the teachers know about the scope of the child guidance service the more room there is for fantasy, conscious and unconscious. They will probably have had some direct experience of the work of other branches of the school health service and this will probably be helpful. The psychologist on his side will have had experience of working with other groups of teachers, but in the relatively unstructured situation before the first visit, unconscious anxieties and defences do play a more important part than at a later stage when psychologist and teachers know more about each other in reality.

In appealing for outside help, the school has implicitly confessed its inability to cope with a problem singlehanded. Feelings of inadequacy are likely to be aroused in the staff, in particular in the head teacher and those who have had most to do with the child in question, so that they may greet the psychologist with mixed feelings. The head teacher, who is usually responsible for making the formal referral, may have done so reluctantly with some feeling that he is abdicating his role of leader in the school group. Some head teachers seem to fear the psychologist as a rival who may threaten the cohesion of the staff group. These fears may be increased by the teachers' knowledge that the psychologist visits other schools in the area. They feel that the psychologist might compare their school with others he has visited, or even discuss their teaching methods in other staffrooms. Other specialists, e.g. school doctors, nurses, welfare officers, are also peripatetic, but the educational psychologist, like the inspector, is an especially threatening figure, because his expertise is felt to be very similar to that of teachers themselves.

In order to relieve such anxieties, the head teacher and his colleagues may resort to one or both of the following lines of defence. He may give up completely the role of leader and seek a dependent relationship with an all-powerful psychologist who will, he hopes, solve the problem immediately without making any demands on the school staff. Attempts are made to force the psychologist into an omnipotent role by demanding from him authoritative pronouncements about teaching methods or school organization. At the same time, the resentment which is stirred up in the teacher by his felt need for dependency may cause him to attack the psychologist, e.g. by criticizing his qualifications or experience, or by attempting to show up his lack of skill by setting him insoluble problems. The psychologist who gives dogmatic advice on school procedures is therefore colluding with the teachers' unconscious demand for a dependent relationship. This is not an argument against offering suggestions which teachers are free to accept or reject. Most teachers are able to make use of such help, provided the psychologist who offers it has shown himself to be a co-operative, supportive person with no wish to deprive them of their own responsibilities.

A second line of defence on the part of some head teachers is to control the psychologist's activities. Thus difficulties may be created or exaggerated about the

availability of rooms or access to children. The psychologist may be urged to test a child or to observe a class, when he has asked for an interview with a class teacher. Again, a teacher may decide the line of action the clinic should take with regard to a case, before diagnostic investigations have begun. When such demands spring from the need to control, they may be difficult to modify. Sometimes a teacher will appear to abandon an unreasonable attitude in the light of the diagnostic findings, but when the situation again loses structure because of a long gap between visits, anxiety about the 'powerful' clinic may again increase and cause a reversion to the earlier attitude. On his next visit the psychologist may find that the previous discussion has been forgotten. In happier instances the need for control gradually decreases as the psychologist becomes accepted as a helpful colleague.

There is a tendency for warring elements in a group to seek an ally in a newcomer. Because of the structure of the teaching staff group, this is usually experienced by the psychologist as a tug-of-war between head and assistant teachers. During the first visit, the choice of coffee in the Study or tea in the Common Room may be looked upon as alignment with one side or the other. Where fears and suspicions between head and class teachers are fairly near the surface it may be difficulty for the psychologist to establish good relations with both. The head teacher may find it threatening to allow the newcomer to discuss cases with his assistants. He may insist on being present at such discussions, or, in more extreme instances, only permit hasty conversations outside a classroom door which has been left ajar. Assistant teachers in their turn may try to seduce the psychologist into criticizing the head teacher, for instance, by making adverse comments about administrative arrangements for which he is responsible. In more cohesive staff groups these pressures are of course much less powerful. Where head and assistant teachers are not unduly anxious about their own positions within the staff group they can more readily accept a newcomer on a reality basis.

VOL. 2 1961

It is generally agreed that his teaching experience helps the educational psychologist to work more effectively with teachers. It should also be remembered that this qualification creates its own problems at the unconscious level. A visit to a school may awaken anxieties in many adults, as initial lack of parental co-operation in some parent-teacher activities would seem to indicate. One is unwilling to re-enter in an ambiguous capacity—neither teacher nor taught—a highly organized group, in which the recognition of status is extremely important. For the adult who has himself had teaching experience, these and other anxieties may be aroused. One feels that one's autonomy is threatened by the authoritative demands of the quasi-parental teaching staff. Ilse Hellman (1958), following Melanie Klein, has suggested that teaching is apt to arouse phantasies of feeding. The inexperienced psychologist, in particular, still doubtful of the value of his own work, may envy practising teachers their ability to carry out this activity, in which he no longer shares. His envy will be particularly strong if he is engaged mainly on diagnostic work and has few opportunities for continuous relationships with children in therapy or remedial work. In addition to these feelings of envy, the psychologist may also experience guilt about having given up teaching. In dealing with unconscious anxieties about his envy, the psychologist may make use of one or more of the defence mechanisms described by Melanie Klein (1957), such as devaluation of the envied teaching role

and attempts to stir up envy in teachers, e.g. by exaggerating the importance of the psychologist's own work.

A further problem springs from the limitations of the psychologist's teaching experience. Any individual on first coming into contact with a group has a strong need to be accepted by it. Bion (1948) has pointed out that "Group mental life is essential to the full life of the individual . . . and . . . satisfaction of this need has to be sought through membership of a group." As I have already suggested, a head teacher may either exert strong pressure on the psychologist to adopt the role of an omnipotent parent figure or else may try to restrict and control him. Just because he, himself, is unlikely to have stayed long enough in teaching to have had experience of headship, the psychologist is particularly susceptible to these pressures. In order to gain easy acceptance by the staff group, he may either revert to his former role of assistant teacher or assume the mantle of omnipotence. These defences protect the psychologist from his own feelings of weakness and inadequacy, as well as fulfilling the unconscious expectations of the teachers. It is obvious that unconscious collusion of this kind is not consistent with fruitful co-operation between the psychologist and the school.

ANXIETIES UNDERLYING SPECIFIC CO-OPERATIVE ACTIVITIES

(1) *Psychological testing of children*

Psychological testing in school may be felt as a threat by the head teacher, particular if he has reason to be anxious about the educational standards of his school. He may unconsciously attempt to frustrate the psychologist by creating difficulties about rooms and times. Class teachers share this anxiety, and may also envy the psychologist the time he has to devote to individual children. Another cause of anxiety is the disappearance of a child from class for testing. If several children out of the same class are tested on one day, the teacher's anxiety about the cohesion of the class group may become acute. This is analogous to the feelings of therapeutic groups about absent members, as described by Bion (1949). Teachers may half-deny this anxiety in such comments as "I wish you'd take all of them off my hands".

(2) *Interviews with parents*

Elliott Jaques (1955) has described how one group may defend against depressive anxiety by scapegoating another. Thus a school staff may seek to alleviate its guilt about aggressive feelings towards pupils by scapegoating parents. This is an effective defence mechanism only so long as the real contacts between staff and parents are kept to a minimum, and breaks down if teachers are asked to meet parents on school premises. Interviews between parents and the psychologist from which teachers are excluded may be also threatening, if they are experienced in phantasy as conspiracies against the teachers' own quasi-parental relationship with the child.

(3) *Exchanges of information*

Communication of facts between psychologists and teachers is not always easy. It has been observed above that one limiting factor is the teacher's capacity for

observing and interpreting children's behaviour. Teachers may find these tasks difficult through lack of a theoretical background and training in observation. On the other hand they may be inhibited because of an unconscious need to deny the realities of a painful situation. A class teacher may use such blanket concepts as 'laziness' to explain the conduct of the able child who is not working well, because he cannot bear to face the child's unhappiness. Another teacher may defend against his paranoid anxieties by refusing to recognize the existence of hostile feelings in a quiet, withdrawn child.

(4) *Discussion about therapeutic action*

The quality of the co-operation for therapeutic ends which can be achieved by the teacher and the psychologist will depend largely on the way they have dealt with the anxieties aroused by their earlier encounters and the degree of trust which each can place in the other.

VOL. 2 1961

The anxieties which are aroused in a teacher by the absence of children from his class have already been referred to. If a child is regularly absent for treatment these anxieties are obviously increased. Additional problems are created by the development of the child's transference for the therapist, and any attendant acting-out in class. Some light on the teacher's anxieties about hostile behaviour on the part of his pupils is supplied by Ilse Hellman (1958), quoting Susan Isaacs (1933): "the teacher cannot do her work well unless she attracts to herself mainly the forces of love". An increase in the overtly aggressive behaviour of a child in class may be recognized intellectually as a favourable symptom, but will be experienced emotionally by the teacher as a threat to his position. If it is hoped not only to secure permission for a child to be absent from class for treatment sessions but also to induce a more tolerant attitude in the teacher towards difficult behaviour, a good deal of supportive work will be necessary throughout the period of the child's treatment.

Problems of placement evoke teachers' own separation anxieties, because of their identification with their charges. Guilt is apt to be felt about the transfer of children to other schools, and the situation is particularly hard to bear if no report is received on a child's progress in his new school.

(5) *Educational and preventive work*

It was observed earlier that a major part of the educational psychologist's preventive work in schools arises indirectly out of his other encounters with teachers. It is likely that fundamental changes in teachers' attitudes will result from these encounters only if a satisfactory identification with the psychologist has been achieved. Thus it is valuable for one worker to be the permanent link between the child guidance service and any one school. Moreover it is important for the psychologist to avoid wherever possible stirring up the teachers' hostile feelings against himself. If teachers' curiosity about the causation of their pupils' behaviour is often frustrated by the denial of information, they will feel angry and resentful. When the psychologist implies the existence of secrets he cannot reveal, he may also stimulate the sexual components of the teachers' curiosity. Learning in this field will then be

felt as a dangerous, forbidden activity which must be inhibited. Thus when a psychologist cuts short exchanges of information and discussions about a case in the hope of 'getting things done', he may not only be impoverishing the quality of co-operation as regards that case, but may also be robbing his work of educational value.

Special problems appear to arise in intensive group work with teachers. Both Smith (1957) and Isaac (1958) note that teachers have very acute anxieties about 'leaderless' groups, and the latter writer relates these feelings to the rigid structure of the school group. Smith (1957) points out that the deepening insight into their own difficulties which teachers derive from group participation may lead them to seek individual therapy, which is not always readily available. Isaac (1958) shows that powerful transference feelings, both positive and negative, are directed at the leader of a semi-therapeutic group of the type he describes. Leadership of such a group would evidently impose heavy strains on a psychologist, particularly on one who is without benefit of analytic or casework training.

CONCLUSIONS

In this paper I have tried to isolate some unconscious processes which seem to be at work in school visits, and to indicate ways in which they can interfere with realistic task-centred co-operation between teachers and psychologists. Few recommendations for the solution of these problems have been offered. Reports of pioneer work in other fields of mental health consultation describe lines of approach which might be tried out by psychologists working with teachers in this country. The interesting work of the Lasker Centre at Hadassah in Israel (Rosenfeld and Caplan, 1954) would seem to be particularly relevant. It is to be hoped that British educational psychologists will eventually develop communicable techniques of co-operation with teachers, which will not only be informed by insights derived from allied fields but also be geared to the realities of our own educational system.

SUMMARY

In this paper an attempt is made to discuss the relationship which develops between psychologists employed by local education authorities and teachers as a result of the psychologists' school visits. The activities which are undertaken co-operatively by psychologists and teachers in the course of these visits are classified under five heads. Some observations are made on the unconscious processes which underly each of these activities. These observations make use of concepts derived from psycho-analytic theory, and in particular from the work of Melanie Klein.

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VOL.
2
1961

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BEHAVIOUR THEORY AND CHILD GUIDANCE

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THE PROBLEM

THE title of this paper may be misleading. It is anything but an attempt to apply the conceptual tools of behaviour theory even with moderate rigour to child guidance. It is no more than a modest first approximation of a learning-oriented approach to changeworthy behaviour in children, relating the way in which the behaviour has been learnt to techniques to be used in unlearning it.

Most current child guidance practice assumes, implicitly or explicitly, that the main therapeutic task is to resolve conflicts (Boenheim, 1938; Burbury *et al.*, 1946; Cook, 1944; Hamilton, 1947; Lippman, 1956; Louttit, 1947; Pearson, 1951; Slavson, 1952). The model of the conflicts in question is, almost invariably, though sometimes only by implication, one between an instinctual drive, or primary motive, and a secondary, more socialized motive. However, it will be shown here that with many or perhaps most cases within the purview of Child Guidance such conflict is not the core of the problem. We will call it neurotic conflict in contradistinction to what we will call sociological conflict. The latter arises when the organism has acquired a pattern of adaptive responses in relation to environment A which is no longer adequate to meet the vastly differing demands of a situation B which suddenly emerges. With this we shall deal in some detail later.

In this paper an attempt will be made to point the way towards an interactional analysis of atypical development of children. Instead of focussing attention on the growth process, development stages, or 'developmental tasks' (a recent term implying environmental co-determination) we shall here concentrate on analysis of the relationship of the child to the sequence of learning situations presented by his environment.

The bio-social setting

Following J. Z. Young (1957), the organism will be regarded as a homeostatic 'machine'. This implies that the organism tends to maintain its inner environment within certain predictable limits. In order to maintain these limits, there is a need for mechanisms (or dynamism) identifying present and predicting immediately ensuing environmental conditions. Some of these mechanisms are relatively invariant in time, e.g., thermostatic control in mammals, or instinctual behaviour in insects. Others, e.g. perception in humans, are variable and not only effect, but are affected by, feedback. Young writes (1957, p. 20): "The essence of a self-controlling machine is that it contains some system that is a representation of the conditions that are likely

to be met with in the surroundings. The detectors inform it when any condition changes. They provide information that determines the appropriate response among the repertoire of possible actions." "Decisions between alternative courses are made in the light of information received from three sources: (1) from heredity, (2) from the environment, and (3) from the information store that has been acquired during the lifetime of the individual."

The function of these mechanisms is to ensure optimum homeostatic balance. From this point of view, then, the main function of learning is prediction of future environmental conditions, typically taking the form of "if A followed B in most observed instances in the past, then perceiving B is likely to evoke responses appropriate to A".

However, insofar as organisms, especially humans, are capable of symbolic representation of the environment and its constituent parts, a further possible function of learning emerges. This function is that of approximating the homeostatic optimum, through making inner symbolic responses which are more pleasurable than exteroception-based environment-orientated responses. In other words, optimum homeostatic balance can be achieved either by predicting environmental conditions and subsequently adapting to them, or by hallucinating need-reducing environmental conditions. It is this compensating role of phantasy which makes human psychology particularly complex.

VOL. 2 1961

It follows, then, from the foregoing, that the less frustrating the sequence of environmental conditions, or, to be more precise, the more readily surmountable the inevitable obstacles, the more of the organisms learning will be environment (reality) orientated, rather than towards phantasy removed from immediate reality. On this we shall comment later, as it plays a major role in maladaptive processes.

Delineation of the field of concern

For the following, we shall be child-centred in the discussion, in the sense that our main concern shall be the child's behaviour and means to influence it. Thus, we shall not here be concerned with techniques for changing parental behaviour, excepting those directed towards changing the pattern of parent-child interaction (Wertheim, 1959).

The purpose of diagnosis is action, at least in the sense of disposal. Therefore, diagnosis is of paramount importance. In the following, we shall adopt a functional definition of diagnosis.

By maladjustment we shall mean here a situation of chronic poor functioning of an individual in his social environment. Thus, maladjustment implies changeworthy behaviour.

A CLASSIFICATION OF MALADJUSTMENT IN CHILDREN

The classification is in terms of distant, rather than proximal, causes. A functionally useful classification of maladjustment in children may be:

(1) organic-structural (e.g. brain injury);
(2) biochemical-functional (e.g. endocrine disturbances);
(3) learning-psychological.

These causes are by no means mutually exclusive; however, in many cases it is useful to identify a main cause as against subsidiary causes. In the following, we shall have a closer look at psychological causes, including sociological factors (cf. Bossard, 1948).

Maladaptive behaviour may occur as a result of:

Type A. Lack of some learnt patterns of behaviour which may be due either to:
- (a) failure of:
  - (i) primary social learning ('how to relate'), or
  - (ii) other later learning; or to
- (b) loss of patterns of behaviour previously acquired.

Type B. Learning inappropriate to the patient's environment, either by:
- (a) idiosyncratic training (e.g., the passive-dependent pampered child thrown as a young adult into a highly competitive environment), or by
- (b) sociological influence (e.g. lower-class-appropriate, aggressive physical self-assertion in upper-class environment). In both cases, the conflict can be either:
  - (i) contemporaneous (conflict between present pressures), or
  - (ii) historical (between past and present).

(It is interesting to note in this context that what Alexander (1946) terms re-educative experience in psychotherapy is invariably used with cases which would fall into our category of 'inappropriate learning'.)

Type C. Learning of conflict (e.g., sex-anxiety conflict implanted through punishing otherwise self-rewarding sexual behaviour).

Phenotypically similar behaviours may be either directly learnt, or established and maintained by conflict, or established by conflict but no longer maintained by it (functional autonomy), or determined by more than one of these factors.

To increase diagnostic precision further, it may be useful to distinguish between adaptive and maladaptive behaviour in relation to the child's immediate needs. Thus, a child's demanding behaviour, insofar as it secures an adult's attention, could be regarded as adaptive. However, it becomes maladaptive as soon as it ceases to serve that function.

So far we have only considered adaptation in the present situation. However, while a child's demanding behaviour may be adaptive from the contemporaneous point of view, it is likely to be maladaptive from a developmental point of view, in that it is likely to produce a generally rejecting attitude by the adult in the long run, and in that it ill equips him for the adult role in later life.

To illustrate the classification let us assume that a patient's main symptom is aggressive acting out.

The main cause may be:

(1) A brain trauma (probably due to disinhibition caused by destruction of cortical tissue). 'Organic.'

(2) Chronic or present over-secretion of adrenalin without identifiable psychological antecedents. (Admittedly, aggression is not the only possible outcome, as fear could also be a concomitant and the relationship between adrenalin and aggression need not be one of direct cause and effect.) 'Biochemical-functional.'

(3) (a) Lack of effective father-figure and consequently poor super-ego development. 'Psychopathic.'
(b) Specific learning of aggressive behaviour as appropriate and desirable. 'Sub-cultural.'
(c) Over-inhibition of existing aggressive impulses with violent conflict and periodic direct discharge of aggression. 'Neurotic.'
(d) Ego-syntonic release of aggressive impulses in spite of possibly adequate socialization in a conceivably normal environment. The world is seen as hostile, and attack as the best form of defence. 'Paranoid.'

Granting that the classification in itself holds water, there are still at least two points of view from which it can be legitimately criticized. It could be charged, on the one hand, that it unduly over-simplifies the role of environment in development or, on the other, that it is too environment-centred and takes insufficient consideration of the organism which it regards as a 'black box'.

Both criticisms are justified. However, I do claim that this over-simplified classification may prove to be of some use.

VOL. 2 1961

Our classification is most vulnerable to the criticism that it neglects *constitutional* individual differences. If individual constitutional differences resulted in quantitative differences only, e.g. that a constitutionally passive child would need a higher level of stimulation to produce the same activity level brought about in a constitutionally more active child by a lower level of stimulation, the matter would not be of crucial importance. However, there may be interaction between environmental and constitutional factors, as suggested by Glueck and Glueck (1956). On the other hand, we know much too little about these interactions at this stage to include constitutional factors in our classification.

Granting, then, that our classification may seem sufficiently meaningful to be regarded as a starting point, we still have to demonstrate that, as a diagnostic scheme, it is useful. This will be determined by the extent to which it points to appropriate remedial measures, including psychotherapy, and by a consideration of how it compares with other diagnostic schemes in common use.

Pearson (1951) gives the following classification of psychological illnesses in children:

(1) Direct reactions to present environmental stress.
(2) Acute and chronic anxiety state.
(3) Anxiety hysteria.
(4) Conversion hysteria.
(5) Organ neurosis.
(6) Compulsion neurosis.
(7) Perversion.
(8) Psychosis.
(9) Character neurosis.

However, we learn little about how his diagnosis affects treatment and it makes one wonder whether it serves a purpose other than determining whether or not he should take the case on for treatment, as well as serving as a guidepost in relation to what development he would expect in psychotherapy. With the exception of (1),

possibly (2) and (7), as well as some under (8) above, all categories would have been classified as 'neurotic conflict' in our scheme.

Significantly, when discussing actual cases, his diagnoses become more meaningful, not because, but in spite of, the diagnostic categories used. Thus, in discussing enuresis, the *ad hoc* classification "revenge enuresis" is introduced, which does not fit into his general classification but is useful for prescribing treatment in that it indicates that resolving negative aspects of the mother-child relationship should be the main goal of therapy.

Slavson (1952) gives the following classification:

(1) Primary behaviour disorders.
  (a) Habit disorders (e.g., thumb-sucking, crying);
  (b) Conduct disorders (e.g., disobedience, disorderliness).
(2) Psychoneuroses
  (with no definite sub-classification offered).
(3) Character disorders.
  (a) Neurotic character (conflict-motivated acting-out);
  (b) Infantile character (over-dependency);
  (c) Psychopathic personality (defective or non-existent super-ego).

We shall examine this classification in some detail, as, although it seems to be considerably more useful than Pearson's, yet it is still partially symptom-bound and insufficiently action-orientated.

Let us take the 'primary behaviour disorders', and specifically the 'habit disorders' first. If we make a distinction between self-rewarding as against instrumental behaviour, it should be obvious that whereas thumb-sucking is likely to be self-rewarding, crying is more likely to be instrumental behaviour designed to elicit help from the social environment (especially if it is excessive, and without physical cause). Crying could probably be stopped by consistent non-rewarding of crying, especially if coupled with rewarding of non-crying. However, thumb-sucking, being self-rewarding and self-orientated (as contrasted with the social orientation of crying), can only be prevented by offering more rewarding substitutes. In other words, whereas thumb-sucking is mostly due to relative lack of social learning, crying is mostly the result of wrong social learning. By the same reasoning, both types of conduct disorder (disobedience, disorderliness) may fall into the same category as crying, that is, being the result of 'wrong' social learning. Phenotypically similar conduct disorders may, however, be primarily conflict-motivated

Both psychoneuroses and neurotic characters are conflict-dominated disorders, while infantile character and psychopathic personality (in the sense of defective or non-existent super-ego) are the result of lack of effective learning.

It was implied in the above argument that Slavson's classification has no direct bearing on treatment, except for his psychoneurotic category. He would classify both 'continuous' and 'discontinuous' encopretics (cf. Anthony, 1957) in the same category and, insofar as treatment is, as it should be, prescribed by the diagnosis, his treatment would be the same for the two. I have no doubt that, in actual fact, his treatment would be appropriate to the patient's condition rather than to his diagnosis, but to the extent to which this may be the case his formal diagnosis is useless.

RELATIONSHIP BETWEEN DIAGNOSIS AND TREATMENT

Remedial measures will obviously be different for lack of learning', 'inappropriate learning', and 'learning of conflict'.

In the case of 'lack of learning' the therapeutic aim is to supply learning experiences making up for the ones missed in life-at-large.

With inappropriate learning, the task is first to extinguish inappropriate behaviours and subsequently to present learning situations evoking, as well as rewarding, the desired behaviours.

Learning of conflict could best be regarded as a special case of inappropriate learning in which anxiety, including guilt as a special kind of anxiety, was attached to behaviour instrumental to need-reduction, in other words, to pleasurable behaviour. Here, the main task is resolving the conflict by extinguishing anxiety, except when this may be socially undesirable.

In the following, we shall briefly discuss what Dollard and Miller (1950) regard as the chief conditions of therapy for what we have termed neurotic conflict (most of it would not hold for what we termed 'sociological conflict').

(1) Permissiveness as an anxiety-reducing agent.

(2) By encouraging the patient to talk, and consistently failing to punish the patient, the therapist creates a social situation that is the exact opposite of the one originally responsible for attaching strong fears to talking and thinking. As a result, anxiety-reduction and extinguishing of fears generalizes, and weakens the motivation to repress other related topics that were originally too frightening for the patient to bring up.

However, lasting extinction of anxiety may not be possible at the periphery, only at the seat of anxiety, so to speak. On the periphery, the usefulness of extinction may be only very limited.

(3) The therapist helps the patient to discriminate, bringing out the contrast between conditions in which fears were learned and present conditions.

(4) As fears are reduced new modes of adjustment are tried, are rewarded and become gradually established.

(5) The therapist employs two major techniques:

(a) He concentrates on reducing the fears and other drives motivating repression and inhibition, or in other words on analysing 'resistance'.

(b) He is non-directive, in that he tries to present the patient with a graded series of learning situations, accepting the patient's pace without trying to force him into a preconceived mould.

This leads us to the most important question of technique which we shall not discuss in detail here, partly because the author does not claim to know the answers.

It is most likely that techniques relying on vehicles other than insight are more important in child guidance than in work with adults. Insofar as speech as a vehicle of communication is relatively poorly developed in children, and the smaller they are the more poorly, it would appear to follow that speech-mediated interpretation is the less appropriate the smaller the child. The function of change-directed insight would be, following Dollard and Miller (1950), to mobilize the patient's reasonableness in resolving the conflict. "This does not make sense", is thought to be a powerful well-being-directed motive in therapy. However, this motive, too, is weaker in

little children. It would therefore appear likely that insight-orientated therapy is mainly applicable from adolescence onwards, and mainly insofar as learning of conflict is a major factor.

Hamilton writes (1947, p. 81): "Transference in a child has a different colouring from the same phenomenon in the adult relationship. Since the child's ego is immature and incomplete, the therapist is closer to a 'real' parent in the child's mind." An important implication is that the child's potential for inducing change by means of *identification* is considerably greater than that of the adult.

Insofar then as there are cases in which conflict- or insight-therapy is not indicated, it would appear that situations other than the individual therapeutic session should be available to provide the child with a series of graded learning, re-learning and un-learning situations to effect the therapeutic goal. It would further follow that group therapy is the more efficacious the more relatively conflict-free the basis of the changeworthy behaviour.

CASE MATERIAL*

Type A(a) (i). Early infantile autism is the best example. The therapeutic aim is obviously to build a basis for object relationships, to prove to the child that the best source of need-satisfaction is another human organism, and the best means of eliciting need-satisfying behaviour emanating from other human organisms is to communicate with them.

Type A(a) (ii). Anthony's (1957) 'continuous' encopresis, in which systematic toilet training never occurred, would be a good example. A case of this kind would be that of the 6-year-old Peter who was found to wet and soil his pants at school. The eldest of four children, he lives in a completely neglected slum household, getting his meals at fairly regular times, but otherwise left to run wild. What he needs in attacking his symptoms is obviously some habit-training in the first place.

Type A(b). Our example will be a case of autistic withdrawal in a 9-year-old boy. Stephen, the second of two children, developed quite normally up to the age of 3: in fact he was so responsive, talkative and intelligent that the parents often showed him off to visitors.

He then had severe dysentery with very high fever, and was hospitalized for two months. When taken home he was still very weak and could not speak. A few weeks later his condition deteriorated again, he contracted pneumonia as well, and was hospitalized for another two months.

After his return from hospital he remained mute and unresponsive. Stephen's parents, especially his mother, rejected him increasingly as a reaction to his unresponsiveness and general regression, and two years later had him admitted to an institution for subnormal children. However, after Stephen had stayed there for about six months, the parents' guilt feelings over abandoning him mounted, and they decided to take him back. The child has improved little since, has very little speech, and is generally most negativistic towards his mother. The first therapeutic step with this child would obviously have to be making human contact worthwhile again by satisfying his needs from whatever cues, mainly non-verbal, he may give. Once this is achieved socialization can be aimed at in the therapeutic process, as

*For the meaning of the reference letters and numerals see page 138.

well as using 'uncovering techniques' if significant conflicts emerge at this stage (Putnam in Lippman, 1956).

Type B(a). Jerry is a 10-year-old boy, the youngest 'afterthought' child, with three elder brothers aged 15–20, all of them at home. He was referred for marked school retardation, especially in reading, in spite of average intelligence.

He was born with too small an opening of the larynx. His crying was to be avoided at all costs. His mother was ready for him all the time and his every whim was satisfied as soon as it arose. His mother continued to feed him liquids and mashed foods. Although Jerry's condition was close to normal by the time he was four, he refused to take solids; mother obliged and at 9½, when they came to the clinic, she still cut all his food in small pieces for him. He had incessant nightmares around the central theme of being left alone, and then being involved in an accident or being attacked by wild animals, etc. His fears can easily be traced to separation anxiety as their source. At school, of course, he proved to be most inadequate, both socially, being unable to stand up for himself, and scholastically: his frustration tolerance was very low.

VOL. 2 1961

In Jerry's case, a number of circumstances, including his initial medical condition and his marked baby-of-the-family status, combined to teach him complete mother-dependency. He was well-adjusted to the family situation, and his poor adjustment *vis-à-vis* the community at large remained undiscovered until he had to go to school. Here, mother-dependent behaviour was no longer appropriate. However, the discrepancy between the requirements of the school situation and those in which prior learning had occurred, were too great for adaptive new learning to occur. To put it somewhat more precisely, as achievement had not been consistently rewarded by mother in the past, the acquired drive for achievement had hardly developed, and therefore cues which evoke achievement-orientated behaviour in the average child failed to do so with this child.

Thus, the main aims of treatment are (i) psychological weaning from mother, (ii) increasing frustration-tolerance, and (iii) implanting achievement-orientation. Obviously, the three aims are closely inter-related. The first implies that the therapeutic process should provide learning experiences in which persons other than mother, and preferably unlike mother, acquire positive valences for him. The second aim points to the necessity of carefully graded frustrating situations, always so dosed that satisfaction gained, or drive-reduction, remained greater than the intensity of the frustrations. (It is likely that the subjective frustration-experience corresponding to identical situations declines in intensity with repeated subjection, as an adaptation-level phenomenon.) The third aim implies a gradual introduction of achievement-orientation in the areas of maximum need-satisfaction at first.

Let us now examine the therapeutic potential, in relation to this case, of the following arbitrarily selected modes of treatment: (1) psycho-analytic, (2) individual learning-orientated, (3) relatively *laissez-faire* group, (4) individual abreaction, and (5) parent–child-relationship-centred.

Individual psycho-analytic treatment is inappropriate, as it is very doubtful if there is much pathogenic material to uncover other than secondary phantasies appropriate to the not-yet-abandoned oral-dependent phase. Even if there is, I would maintain that establishing new avenues of satisfaction is, in this context, a

more economical therapeutic procedure than concentrating the attack, as it were, on 'uncovering' the motives of the fixation. It would be mainly directed at our first therapeutic aim, weaning from mother, more or less peripherally dealing with increasing the child's frustration-tolerance, but neglecting achievement-orientation. I do not maintain it need be ineffectual—only that it is uneconomical.

Individual learning-orientated treatment is likely to be the most effectual in relation to aims (ii) frustration-tolerance and (iii) achievement-orientation, without directly attacking the mother-fixation. Improvement in that area would be due to relative atrophy rather than unlearning, and to that extent the likelihood of recurrence in situations of crisis would be increased. In other words, mother-fixation-orientated behaviour would only be pushed somewhat further down in the habit family hierarchy. Thus, to complete the job, a certain amount of uncovering therapy would be appropriate.

Individual abreaction would probably only help insofar as inability to cry may have been a traumatogenic situation.

A relatively *laissez-faire* group, its members selected on the basis of the shared attribute of, say, some social inadequacy, would also be effectual mainly in relation to (ii) frustration-tolerance and (iii) achievement-orientation, by providing a sheltered, non-threatening, yet stimulating environment. In other words, the motive 'to do things for oneself' would be increased, while reducing anxiety at the same time. Other things being equal, one would expect it to be a more random process than individual psychotherapy and therefore of longer duration for the individual patient. However, as it is therapy directed to the area of maximum inadequacy (social relationships) and as, furthermore, it is more economical of the therapist's time, there is much to recommend it. However, it is doubtful if the mother-fixation could be adequately dealt with in the group.

In therapy centred on the parent–child-relationship, working with both parents and the child simultaneously, the mother-fixation could be attacked at its very source without, however, making much impact on areas (ii) frustration-tolerance and (iii) achievement-orientation.

It was implied in the foregoing that some methods are more adequate than others for dealing with this case, and that different methods tackle different aspects of the problem.

Thus, perhaps, work on the parent–child-relationship combined with *laissez-faire* group therapy could be expected to yield optimum results, including considerations of economy.

Commenting on this case generally, it seems likely that there is an innate component co-determining activity level. Restrictive child-rearing would probably have one set of effects on high activity-level children and another on those with a low activity-level.

To the extent that this is so, therapeutically different handling of the non-assertive child would be indicated depending on whether the child 'innately has little aggression' or, on the other hand, 'has some aggression, either innately or through learning, but has repressed it'. In the first case, assertive behaviour has to be *implanted*, whereas in the latter case it only has to be *released*.

Type B(b) (i). Bobby is a 7-year-old boy referred to a child guidance clinic by

his mother for aggressive behaviour. The second of three children, his changeworthy behaviour consists of throwing small stones towards other children, not arriving home in time, frequent temper tantrums, and complaining about being restricted by his mother. It was soon revealed that the parents were upholding and trying to enforce middle-class standards of behaviour while they lived in an Emergency Housing area. Thus, a very marked conflict was generated between two sets of effective pressures operating on the child, those from home as against those from the neighbourhood. Psychological examination of the child revealed a feeling of isolation from his peers, indicating clearly that his symptoms, including his social isolation, were the result of a compromise between two incompatible sets of pressures.

Obviously, insofar as the child's behaviour is adaptive in relation to his environment, i.e., insofar as his internal conflict is but a reflection of the conflicting pressures in his environment, psychotherapy is not indicated.

What is indicated is environmental manipulation to eliminate, or at least minimize, the conflict in his environment.

Type B(b) (ii). Cherry, a 7-year-old aboriginal girl from an isolated mission school recently adopted by a city-dwelling upper middle-class couple, was referred for sex-play, restlessness and wandering. Cherry's behaviour was appropriate to, and approximating the norm in her former environment, but is now regarded as changeworthy in her new environment.

This conflict can best be resolved by assisting the parents in helping Cherry to learn the behaviour appropriate to her new social environment.

Type C. Bruce, 7 years of age, the younger of two boys, was referred for temper tantrums and nightmares. Bruce was born at a time when the mother had many objectively-based worries, was anxious and most impatient. Mother's anxiety was communicated to the boy, as well as a lack of a sense of security, which became increasingly marked in him. His feelings of aggression towards her mounted, but he became increasingly unable to vent this aggression for fear of losing her love. In other words, mother's behaviour evoked aggression in Bruce, but as he has come to associate punishment with aggression the latter became increasingly inhibited in expression, most markedly in relation to mother, and to a lesser extent to people reminding him of his mother. He dealt with the conflict by projecting his aggressive impulses onto others and by neutralizing his fears and anxieties by counter-phobic mechanisms such as daring feats. However, even though he was inhibiting his mother-directed aggression and neutralizing his fears, he still felt insecure of mother's affection, and indulging in pleasant phantasies bridged the gap here between his perception of the situation and minimum security required for being free of manifest anxiety.

This case is of the type which has been traditionally regarded as suitable for psychotherapy, in which the main therapeutic aim is the resolution of a neurotic conflict. That is, an uncovering technique is definitely indicated in order to (i) free the inhibited aggression so as to make it mouldable by means of socialization rather than repression and suppression, and (ii) face him up to, and subsequently extinguish, his major anxieties. His flight into phantasy is also likely to diminish in frequency and intensity as he gains more satisfactions in real life and the need for it becomes smaller as therapy progresses.

VOL. 2 1961

Methods other than uncovering methods would hardly be indicated, and individual treatment would be preferable to group treatment, although from the point of view of therapist's time individual combined with group treatment might be most economical.

EXCURSION: THE PHANTASY-RIDDEN CHILD

In principle, therapeutic handling of the problem of withdrawal into phantasy can concentrate either on successively establishing other channels of satisfaction, or, if other terminology is preferred, of need reduction, or, on the other hand by means of interpretation, or otherwise, to detract from the satisfying, need-reducing potential of the phantasies. In both cases, the aim appears to be to change the ratio of phantasy-based satisfactions to reality-orientated satisfactions in favour of the latter.

An implication of the foregoing for child psychotherapy appears to be that, with phantasy-ridden children, encouragement of living out their phantasies in play therapy is only indicated insofar as interpretations are advisable (from the point of view of reducing conflict) and/or insofar as sharing in the child's phantasy life is essential for establishing or maintaining a good relationship with the child. Even then, insofar as it is acceptable to the child, an active effort at increasing his reality-orientation would be indicated.

CONCLUSION

It should be emphasized that the classification must not be regarded as consisting of mutually exclusive categories, neither are the remedial techniques mutually exclusive.

In principle, one may regard the diagnostic process as consisting of three phases. In the first, the aim is accurate description, in the second, establishing the likelihood of causal relationships; lastly, in the third, those facets which, in practice, can be acted upon, are singled out. Thus, although a case may be diagnosed as 'mainly organic' in phase 2, it may receive treatment appropriate to 'inappropriate learning'. The rationale here is that although, say, only 40 per cent of the variance of 'excessively aggressive behaviour' can be attributed to 'inappropriate learning', this aspect can be acted upon, and, depending on the extent and nature of the brain-damage, appropriate learning experiences may partially counteract its effects.

What therapeutic techniques can be mixed, and how, is a problem about which we know next to nothing. However, this being so, it may be more economical to assume that they do, rather than that they do not, mix, except when the nature of the therapist-client relationship makes some techniques too discrepant.

SUMMARY

(1) Much child guidance practised in the past has been without, or based on inadequate, systematic theoretical foundation.

(2) This paper is a modest attempt towards pointing the way to a framework for such a foundation.

(3) A distinction is made between disturbances mainly due to factors other than learning and those due mainly to learning.

(4) Disturbances due to learning are further subdivided into those attributable to (a) lack of learning, (b) inappropriate learning, and (c) learning of conflict.

(5) It is suggested that different remedial and/or therapeutic techniques are appropriate to these three categories.

(6) Cases for each of the categories are presented with emphasis on the relationship between type of pathogenic learning and appropriate therapeutic techniques.

(7) Cases are rarely, if ever, 'pure'; therefore, appropriate techniques may be mixed. However, categorization is still useful in terms of 'how much of what'.

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VOL. 2 1961

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EXPERIMENTAL PSYCHOLOGY AND THE TREATMENT OF A TICQUEUR

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INTRODUCTION

IN A recent book a series of new techniques for the treatment of the neuroses has been presented (Eysenck, 1960). Amongst these methods of treatment, derived from the fields of experimental psychology, is that of therapy by negative practice and conditioned inhibition ". . . continual repetition of a habit in the same stimulus situation will ultimately lead to the extinction of that response" (Kendrick, 1960). Nevertheless very little work has been reported so far which deals with the therapeutic application of this experimentally derived concept. Indeed, little progress appears to have been made in the treatment of tics since the publication of Meige and Feindel's classic work (1907) on the treatment of tics as examples of learned habits. It was also many years later that Dunlap (1932) claimed that tics could be eliminated by forcing the patient to repeat his tics voluntarily. An adequate theoretical rationale and experimental validation of the therapeutic efficacy of this method was, however, still lacking.

Yates (1958) was the first to report a rationale for such treatment and to carry out a series of experiments designed to determine the optimum conditions of massed practice for the extinction of tics in a young psychiatric patient. The results of this experiment, and of those of Kendrick (1958, 1959) on the role played by conditioned inhibition in the extinction of habit responses, were utilized in formulating the present method of treatment for the removal of a number of diverse tics in a young boy of eleven.

CASE HISTORY

The patient, on referral, was 11 years and 7 months of age. Mild facial tics had been evident from the age of 5. These consisted of slight, involuntary movements of the mouth and the face. They tended to occur when he was excited, as did a mild blinking spasm. For nearly a year prior to referral for treatment several major tics were evident. Suddenly his legs and arms would jerk violently, accompanied by diverse explosive utterances such as "Good, good, good" or "Hurrah, hurrah, hurrah" or "Fool, fool, fool". If such symptoms occurred while he was in a car, their force would be sufficient to shake it. In hospital the ward-sister noted that these same tics were strong enough to move the bed. He would often be unable to eat a meal as he could not hold a glass or any cutlery. When he tried to use a knife and fork, the

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food and cutlery would often suddenly 'shoot off' the plate, ejected by the violent hand movements. Involuntary head-turning to either side in a repetitive compulsive manner was another common symptom, as was the simultaneous raising of his eyebrows and the production of a smile-like tic. Shrugging of the shoulders accompanied by raising of an arm was a further feature. Several minor tics involved repetitive pointing at an object, or the frequent touching of his ears.

His mother admitted that he was a very emotional boy whose emotionality essentially took the form of aggression and over-confidence rather than anxiety and diffidence. She also reported that the father had always 'spoiled' him, she of late being more strict. The parents had often quarrelled over the way he should be handled. On the basis of the patient's history and psychological testing (Family Relations Test (Bene and Anthony, 1957)) the following hypothesis emerged. The patient was an over-privileged child who wished to claim, and was used to claiming, all the parents' attention, but of late the mother had attempted to discipline him. This constituted a threat to his over-indulged self, which produced anxiety, resentment and considerable tension. The tics could be regarded as tension-reducing phenomena. They also tended to occur at this time when he was excited or happy or when he had to meet new situations. They became much worse, for example, when he first started grammar school or when any of the nursing staff asked him how he was feeling. Any excessive emotional state appeared to produce the tics.

VOL. 2 1961

SYMPTOMATIC TREATMENT OF THE TICS

Proposed theoretical model

Detailed inquiry into the patient's history failed to detect traumata that might suggest how his tics initially came to coincide with drive-reduction. Perhaps the tics were originally *unconditioned* tension reducers. It is hypothesized that they had become elaborated as drive-reducing *conditioned* responses, originally evoked in a variety of situations arousing intense emotion. When such movements either produced or coincided with a reduction or cessation of the tension, the tics would become stronger by a process of reinforcement. Through a process of stimulus-generalization (Hull, 1943) a variety of stimuli similar to these original stimuli would then evoke the tic, which would become further reinforced, thus leading to the development of a powerful positive habit. Thus the reaction potential of the tics, or their readiness to become manifest, may be regarded as a multiplicative function of positive habit strength, which Hull termed ${}_{S}H_{R}$, and the momentary drive strength of tension (D).

Derivation of method of treatment

According to the above model, the various tics would be viewed as simple learned habits which had reached maximum habit strength. In terms of Dunlap's (1932) and Yates' (1958) theoretical-clinical formulations, it should be possible to extinguish them by building up negative habits of "not performing the tics". For as Yates (1958) says: "If the subject is given massed practice in the tic, then reactive inhibition I_R should build up rapidly. When I_R reaches a certain critical point, the patient will be forced to 'rest', or not perform the tic. This habit (${}_{S}I_{R}$) of not performing the tic will be associated with drive-reduction due to the dissipation of I_R and hence will be reinforced. With repeated massed practice, therefore, a negative habit ('not doing

the tic') will be built up, incompatible with the positive habit of doing the tic."

Yates' orientation was rather more experimental than therapeutic. He was concerned to discover the optimum conditions of massed practice for producing conditioned inhibition. As a result of considerable detailed research he came to the conclusion that: "the optimum condition for the growth of the negative habit appeared to be the combination of very prolonged massed practice followed by prolonged rest."

Unfortunately Yates was unable to apply these findings in a further, treatment-orientated study. Jones (1960) decided to do so, using the same patient, in the light of Yates' main findings. Of interest was Jones' demonstration that it is possible by persisting with massed experimental extinction trials to inhibit almost entirely the voluntary evocation of a tic. In general Yates' conclusions were confirmed. The patient showed considerable improvement, both in respect of the frequency of her tics and in her emotional state. Seventeen months after discharge, a psychiatric follow-up assessment rates the patient as "much improved".

Of particular relevance to the derivation of the present method of treatment is the modification of Hull's fundamental formula by Jones (1958). Hull regarded I_R as a (negative) drive and ${}_sI_R$ as a negative habit. He met considerable criticism when he linked both these concepts into one formula, by addition. This was an inconsistency because in terms of his general theoretical principles he should have multiplied them, as he did for the positive drive (D) and positive habits (${}_sH_R$). Jones (1958) has corrected this inconsistency with the following new formulation:

$$ {}_sE_R = (D - I_R) \times ({}_sH_R - {}_sI_R). $$

In this formula, Jones treats the positive and negative drive-states in the same way and similarly the positive and negative habits, suggesting that they are both subject to the same laws.

Eysenck (1956) has defined the conditions under which negative habits (${}_sI_R$) develop. In a recent publication Kendrick (1960) has described this process in detail:

> "In a situation where performance is continuous, I_R builds up to a critical level, this level depending upon the strength of the primary drive (D) present at that moment. Once this critical level has been reached, an automatic resting response is produced (an involuntary rest pause, IRP. These IRP's allow the dissipation of I_R below the critical level, which produces an increment of ${}_sI_R$. After the I_R has dissipated below the critical level, performance is once again resumed. In the normal type of massed practice, where there is a slight pause between trials, as in animal experiments, or the usual 5-sec interval between trials on the pursuit rotor, I_R may not have developed to a critical level. The *voluntary* rest pause, however, acts in a similar way, in that it allows some I_R to dissipate, and so a further increment of ${}_sI_R$ is produced. Eysenck treats ${}_sI_R$ as a habit with all the properties of a positive habit. When performance is resumed after a rest pause and all I_R has been dissipated, ${}_sI_R$ will undergo extinction until the next voluntary rest pause, because of the failure of reinforcement to occur. But because ${}_sI_R$ is a habit, there is spontaneous recovery, and so when there is a considerable gap between sets of trials, say a day, ${}_sI_R$ recovers and, because of this, from day to day there is an increase in the strength of ${}_sI_R$. It can therefore be seen that with this increase in ${}_sI_R$ from period to period, depending upon how quickly ${}_sI_R$ is accumulating, there will come a time when ${}_sI_R$ may equal ${}_sH_R$, in which case the chances of the performance of the habit are 50:50. Now, supposing the habit in question is at an asymptote, and therefore there is only a slight oscillation in its strength; if the habitual act is not repeated it can only lead to more ${}_sI_R$ being accumulated and so reducing the chances of the habit being performed.

This process could be carried out to the point where the chances of the performance of the habit are very remote."

Reverting to Jones' formula (1958), when the equation is multiplied out the same drive (D) can activate both the positive (${}_{S}H_{R}$) and negative (${}_{S}I_{R}$) habits. It logically follows that once a tic has been extinguished by the above methods, then any increase in drive only serves: "to increase the potentialities of *both* habits proportionately, so no recovery would take place" (i.e. of the tic). Kendrick's experimental work (1958, 1959) with animals appears to support these inferences.

Of considerable importance also were Kendrick's findings that extinction can be brought about faster under conditions of low rather than high drive, and that there was a lowered tolerance for I_R under conditions of low drive compared with states of high drive. In other words when the degree of tension is very high, the reaction potential of the tics is high, accompanied by an increased tolerance for I_R. If the tension can be reduced the tolerance for I_R is less and extinction could be effected more quickly.

The following suggestions thus emerged for planning optimal conditions of treatment for the rapid growth of conditioned inhibition (${}_{S}I_{R}$):

(1) Massed practice trials of the tics to the point where inhibition of their voluntary evocation takes place;

(2) Simultaneous reduction in drive level to produce less tolerance for I_R and more rapid build-up of ${}_{S}I_{R}$. This could be achieved by medication with Largactil before massed practice trials.

VOL. 2 1961

Method of treatment

The subject was a patient in a general hospital ward. He received medication by Largactil (25 mg) in the general hospital approximately three quarters of an hour before he was brought by ambulance to the psychology department. In all he received Largactil 25 mg t.d.s.

One session per day was carried out under supervision, the subject being instructed to reproduce the "Good, good, good" tic as accurately as possible. This involved the imitation of the total tic, including the violent simultaneous leg and arm movements and the explosive utterances. Little or no pause was allowed between each response during the massed practice sessions.

No objective measures were taken of the frequency of the tics under conditions of voluntary evocation. Reliance was placed on observation in assessing their frequency.

There were 36 treatment-sessions in all, the first lasting for 15 min. The practice of the major tic continued for 29 sessions, the remaining sessions being devoted to the practice of the various other tics. The length of the session for the voluntary evocation of the major tics was gradually increased to 31 min of uninterrupted massed practice. Fig. 1 shows the length of time devoted to each of these 29 massed practice sessions.

After 20 sessions had been completed in the practice of his major tic, the patient was then forced to practise the voluntary evocation of his remaining tics. This treatment programme is contained in Table 1.

TABLE 1. DURATION OF DIFFERENT KINDS OF MASSED PRACTICE AT EACH SESSION*

Kind of massed practice	Sessions																
	1–20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1. Major tic	15′–27′	30′	–	29′	31′	–	31′	31′	31′	15′	–	–	–	–	31′	31′	–
2. Head turning (to right)	–	1′40″	1′40″	–	–	–	–	–	–	5′	–	–	–	–	–	–	–
3. Head turning (to left)	–	1′40″	1′40″	–	–	–	–	–	–	10′	–	–	–	–	–	–	–
4. Head movements (up and down)	–	1′40″	1′40″	–	–	–	–	–	–	–	–	–	–	–	–	–	–
5. Head turning (to right and smiling)	–	–	–	5′	5′	5′	5′	5′	–	–	10′	10′	10′	10′	10′	–	10′
6. Head turning (to left and smiling)	–	–	–	5′	5′	5′	5′	5′	–	–	10′	10′	10′	10′	10′	–	10′
7. Head movements (up and down and smiling)	–	–	–	5′	5′	5′	–	–	–	–	–	–	–	–	–	–	–
8. Ear touching tic	–	–	–	–	–	–	–	5′	–	5′	10′	10′	10′	10′	–	–	–
9. Hand withdrawal tic	–	–	–	–	–	–	–	–	–	–	10′	10′	10′	10′	–	–	–
Total time per session	15′–27′	35′	5′	44′	46′	15′	41′	46′	31′	35′	40′	40′	40′	40′	51′	31′	20′

*Time is shown in minutes and seconds.

At the general hospital, from the 18th session onwards, he practised the tics for at least a further ½ hr per day under the supervision of a nurse.

THERAPEUTIC RESPONSE

Fig. 1 shows the average frequencies of response per minute of massed practice of the major tic. The gradual decline in the patient's ability to imitate this tic voluntarily is quite striking. More important was the generalization of this improvement to his involuntary tics. Towards the end of his stay in the general hospital, he considered that his tics were very much improved both with respect to frequency and intensity. He would go for periods of up to three or four days with little evidence of their presence, something unheard of prior to treatment. In fact, in a 12-hr period of uncontrolled 'observation' in the general hospital prior to treatment, there were at least 26 episodes of agitation involving his major tics.

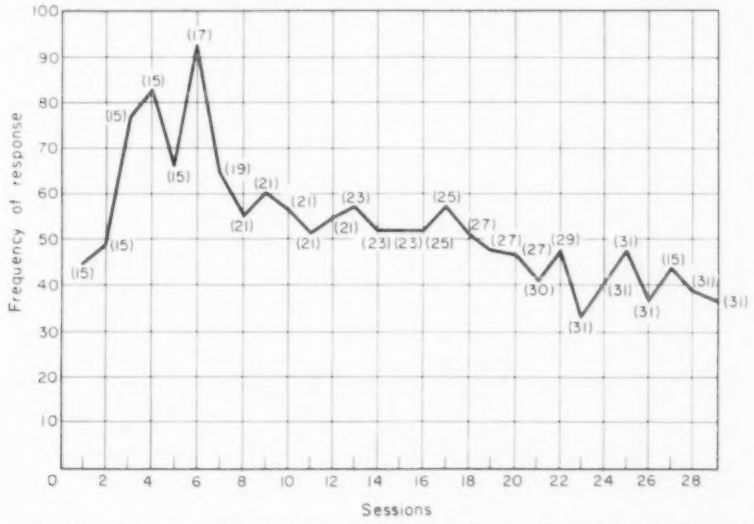

FIG. 1. Average frequency of response per minute of massed practice of the major tic. (Figures in brackets refer to time devoted to each session, in minutes.)

No figures comparable to Fig. 1 are available for the other tics, as no record was kept of their frequency during the other massed practice sessions.

The patient was discharged from hospital some two months after the first treatment session as very much improved.

FOLLOW-UP

A follow-up was carried out one year after discharge. The boy attended with his mother. There was no evidence of any tics through a half-hour interview, except for one slight facial tic.

A film was made of the follow-up interview. This was closely scrutinized to detect any tics which might have passed unnoticed, but failed to reveal any involuntary movements apart from the one mentioned above.

The mother stated that the boy had made a good general adjustment and was

VOL. 2 1961

showing little or no evidence of tics of any kind. She also reported that before returning to grammar school (after a lapse of nearly a year) he had received private tuition for two hours a day to compensate for time lost through illness. On his return he is reported to be mixing well and studying hard. He has also joined the scouts.

DISCUSSION

In the present paper it has been suggested that several situations appeared to be associated with an increase in D, and that the strength of the tics was a function both of their ability to reduce D and the frequency of their evocation. Following the treatment advocated, it was also suggested that any subsequent increase of D would only reactivate both the positive and negative habits proportionately. In other words, the type of therapy adopted produced a negative habit, more powerful than the positive one. Thus, any increase in D would not reintroduce the previous dominance of the positive habit, but rather the negative one of not responding with tics.

However, during the follow-up period the patient was taking tranquillizers irregularly.* The question arises whether this prevented the reappearance of his tics or whether it was due to the psychological treatment, based on the theoretical model just described. Tranquillizing drugs are expected to reduce D (Trouton and Eysenck, 1960; Walton, 1960), and consequently the strength of any positive habit associated with such D might be expected to decrease under sedation, though any subsequent increase of D, either through physiological adaptation to the drug, failure to take the drug as prescribed, or for any other reason might be expected, in terms of Jones' equation (1958), to result in the reactivation of the habit, unless the previous discussion on the development of negative habits was invalid. In fact the tics did not recur, in spite of the patient's *irregular* use of his tablets. He remained a very emotional and excitable boy and family difficulties persisted (the mother still objected to the father's methods of handling him, and he was disrespectful towards his father). He also had to overcome the not inconsiderable difficulties of returning to grammar school and having to make up a year's lost ground. All these facts argue against the abolition of his tics in the follow-up period being due to a decrease of D produced by drugs. The investigations of Yates (1958), Jones (1960) and Ernest (1960) are relevant. Drugs were not used in any of these studies. Significant therapeutic results were achieved, however, using methods similar to those employed in the present study, and there was no evidence of deterioration during substantial follow-up periods. The fact that Kendrick (1960) demonstrated no recovery of response under conditions of high drive suggests that the application of the tranquillizers during the follow-up period was not strictly relevant to the continued inhibition of the tics. The value of such sedation appears to lie in reducing the possibility of other symptoms being learned during the follow-up period, and not in preventing the tics from recurring.

SUMMARY

A theoretical model is advanced to account for the development of a number of diverse tics in a young boy of eleven. A method of treatment, based on this model

*At various times during the follow-up period Fentazin (4 mg t.d.s.), or Thioridazine (25–50 mg t.d.s.) were prescribed.

and on the experimental work of others, was then devised. The success of this treatment is taken as tentative support of the validity of these proposals, particularly since compatible results have been achieved by others using similar methods.

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VOL. 2 1961

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SOME PSYCHOLOGICAL ASPECTS OF THE MANAGEMENT OF THE BRAIN-DAMAGED ADOLESCENT IN A RESIDENTIAL SETTING

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INTRODUCTION

THIS paper is a report of our observations over a 4-year-period of some of the psychological conflicts and mechanisms of adaptation experienced by brain-damaged adolescents and their parents within the setting of a therapeutically oriented private residential school. These students come from middle to upper socio-economic backgrounds. The presence of neurologic and electroencephalographic signs, and a history of prenatal or postnatal central nervous system insult or trauma, substantiate the diagnosis of chronic brain syndrome in each case.

While brain-damaged adolescents require a multidiscipline approach (i.e. seizure control, tranquillization, physical therapy, special education and vocational training) this paper focusses on our attempts to identify and help them deal with psychological problems associated with their adolescence. Our experience suggests that their intrapsychic conflicts and attempts at mastery of, or adaptation to, these conflicts are similar in kind to those of the non-brain-damaged adolescent. However, they may differ in degree, intensity and in the tendency for their psychosocial development to lag behind their biological maturation.

While the brain-damaged group has problems of adjustment similar to those of adolescents of 'normal' development, they are without their total capacity to deal with these problems as effectively. Clinically, this specific group seems distinctly handicapped in those mental processes involved in *new* learning experiences. For example, we find a noticeable lack of complete comprehension and understanding of all the data available from which to learn. Our brain-damaged students manifest an apparent dulling in the processes of selective assimilation and interpretation of environmental cues which might be used to facilitate new learning.

A second observation we have made is that many of our brain-damaged adolescents have become partially fixated at a pregenital level of ego-development extending well into early adolescence. This pattern of delay in psychosocial development seems to be the result of constriction in the affective, cognitive and conative aspects of personality development in our brain-damaged group as compared to non-brain-damaged adolescents.

A third observation is that at the time their teenage friends and siblings

begin to leave home for college, our teenagers come face to face with the reality and meaning of their disabilities, as well as the reality of their adolescent young adult status in the world. This awareness of reality is heightened by an intensification of parental concern and a resurgence of unrealistic parental expectations, strongly influenced for years by patterns of denial or partial acceptance of their brain-damaged son or daughter as a handicapped person. This delayed inter-relationship of parents and brain-damaged teenager in their sociological roles magnifies the threat to both parents and adolescent that the latter will not be able to find a suitable place for himself in the world.

Implicit in the movement from a handicapped childhood to an adulthood of handicap is the possible loss of hope for a tangible change in the child's status. A readjustment of parental expectation is necessary. While the child is a child there is always the feeling of hope. At adolescence, however, parents may find it harder to marshal these hopeful feelings. The years of avoiding reality must come to an end and the destiny of the child, now grown, must be faced. Attempts at avoidance may take many forms. Shortening a little girl's skirts and telling her she is a year younger than she actually is, insisting upon an academic programme long after it ceases to serve the child—each is a design of the parent to forestall the inevitable and must be dealt with at this crucial time. Child and parent need extra support through adolescence. During this period the child, who may have a full-grown body though delayed in mental and social maturation, may or may not be able to take his place in the community. It is at such a time that a residential school setting, by virtue of its control and stability, can offer a healthy opportunity for both parents and teenagers to experience a constructive working-through of the psychological conflicts and reality problems at hand.

VOL. 2 1961

These observations have been supported by data obtained as part of the routine psychological examination (including the Wechsler Intelligence Scales for Children and Adults, and the Rorschach Personality Inventory) on 36 brain-damaged boys from the total population of our upper school unit, ranging in age from 10 to 22 years.

Comparable data were collected on a group of 70 non-brain-damaged adolescents in the 10th grade of a Trenton, New Jersey, High School, ranging in age from 15 to 16 years.

We have summarized this material in Tables 1 and 2 with an explanatory description and interpretation of the findings (see Appendix).

While these data are not submitted as a definitive study, it is believed that they do describe our brain-damaged boys quite well in terms of psychological test material, and give evidence for a pattern of delayed psychosocial development roughly comparable to the emotional development of a non-brain-damaged 6-year-old. We have assumed that the various Rorschach factors mentioned are related to, and are a reasonable measure of, the limitation in affective, cognitive, and conative determinants of personality (ego) organization.

This syndrome of prolonged emotional dependency on parents; decreased learning capacity, which dulls efforts to deal effectively with problems of adjustment; ego constriction with delay in psychosexual maturation; and the impact of the reality and implications of adolescence on the teenager and his parents, has importance for the management of the brain-damaged adolescent.

CASE HISTORIES

The following case illustrations describe briefly three adolescents for whom our psychological management has included both individual and group psychotherapy. In each case it was originally felt that the brain-damaged teenager showed such a marked emotional problem, yet with sufficient accessibility to therapy, as to warrant a trial period of psychotherapy. We recognized that some clinicians have questioned the ability of brain-damaged patients to use a form of therapy which depends to a large extent on verbalizations and abstractions. Our experience suggests that this brain-damaged group, with borderline to dull normal intellectual functioning, can use a psychotherapeutic experience quite well.

Group therapy, though a less incisive approach, served as a good outlet for repressed hostile aggression. It also gave the therapist an opportunity to observe the quality of the patients' inter-peer relationships, and contributed to a quicker and fuller understanding of their intra-psychic conflicts.

Jerry, now 16. His background history indicates adequate social and educational development up to the age of 10 years when he suffered a severe head injury in a sledding accident. Until this accident he was up to grade level (fifth grade) and was reported to have had above average intellectual ability. Two EEG's read at intervals of one and two months after the accident were, respectively: (1) a grade IV abnormal record (diphasic sharp waves of slow spikes scattered in central and posterior areas, more often on the right side); and (2) grade III borderline abnormal record with 4 per sec bursts at 100 μV in occipital areas. He came to the schools when he was 12, and at that time he scored an IQ of 82. He was an isolated, constricted boy who was particularly hostile towards his father and had a hostile-dependent relationship with both parents. He was depressed, poorly motivated and rather scattered and undirected in his interests. His excessive perspiration and his tendency to carry around a portable radio, almost as a friend and defence, were noteworthy. The residential setting has acted as a sort of 'hothouse' for Jerry. It has offered him a place where he can feel less different, less threatened, where he can grow more at his own slow pace. At home, where his parents are both extroverted, powerful and competent people, he felt out of place and beaten down by their expectations, which were obviously set too high, contributing to his suppression of feelings, occasional acting-out, and active use of fantasy as the solution for his conflicts. In addition, group and individual psychotherapy gave Jerry the opportunity to relate on two needed levels. In group therapy he experienced a 'loosening-up' that he was able to put to more specific use in individual therapy with a male therapist. This relationship gave Jerry an opportunity to work on many of his conflicting feelings: the parental indifference that he felt at home, his sexual confusion, his academic and personal frustrations.

Concurrently, we helped Jerry's parents clarify with him that he was still an important member of the family though away at school, which in turn enabled him to concentrate more on the purpose for his being in school. Finally, the parents came through with the promise of a concrete plan for vocational training when Jerry was ready for it.

The past 6 months have marked a 'coming together' for Jerry. From a sense of relief at realizing that he did not have to go to college, he moved quickly to a more realistic appraisal of his own abilities. His interests were in physics and astronomy, and he wished to work in an observatory or planetarium, but he was able to envisage doing this in some capacity commensurate with his ability. He is less isolated and for the first time, at age 16, has established a true, close friendship with another boy. In addition, his functional IQ has risen 20 points and all of his school achievement test scores show significant gains.

The fact that Jerry has been able to establish a warm relationship with a male therapist has enabled him to start to define his own male self-concept.

Jim, age 17, with a functioning IQ of 83, presented a prototype of the late-developing brain-damaged teenager in a residential setting. He was described from medical history as a mild case

of cerebral palsy, substantiated by hospital records. EEG study at 14 years of age before entering The Woods Schools was read as "an abnormal and diffuse tracing, with predominantly right cerebral dysrhythmia". An EEG in 1959 in The Woods Schools was interpreted as follows: "Marked distortion of alpha pattern on right, lack of regularity with high frequency waves superimposed. On photic stimulation spike discharges spread over entire cortex at 4 flashes per sec only. *Impression:* "Abnormal record because of distortion of alpha rhythm in right occipital region".

Two years ago, on entering the school, Jim was seen as virtually a pre-delinquent because of his impulsive, acting-out qualities and his hostile attitude toward adults. His parents seemed distant and unconnected to him, and obviously there had been little factual communication between them and Jim about his handicap, let alone support for his feelings about being handicapped.

Individual psychotherapy has given him an opportunity to bring out his strong aggressions. The special education programme provided a clear-cut direction in dormitory living which has stabilized him considerably. Both parents, with help, were able to insist that Jim remain at school when he attempted to manipulate his way out. The parents' forthright and supportive action, added to the consistency of our approach, has increased his motivation, though Jim still has unrealistic academic aspirations.

At this time of new stability both parents react with strong anxiety and concern about what Jim will do with his life, and reflect this in unrealistic aspirations for him such as being a golf pro, a riding instructor on a dude ranch, or managing a forestry camp. Father suddenly realizes that he has not discussed any of this with Jim, and asks the perennial questions: "What do I tell him?", "Is he old enough to be told that he has a problem?"

When father told Jim that he was born one of those children who had trouble learning, Jim responded by saying that he knows this and knows that he will not be able to go to college. Jim's interests, for the most part, continue to be scattered and unrealistic, indicative of his need for further help with his own self-concept.

In the coming year we will need to help him move away from the academic curriculum, which has become increasingly frustrating. We have met the parents' initial outburst of anxiety about Jim's vocation with supporting recognition that this promises to be a continuing problem. We recognized with them that Jim's development is slow, and that, although two years of residence have added stability to his life, he is insufficiently mature or motivated to use a vocational programme successfully. To impose this on him would only cause failure. They have accepted our interpretation and show beginning recognition of the need to allow Jim to move more at his own pace in selecting and participating in a vocational programme, rather than to impose a programme on him.

Another significant observation we have made is the brain-damaged adolescent's concern for ego-identity, with distortions in self-concept and body-image phenomena. *We recognize that the brain-damaged adolescent's self-concept has had its roots in earlier life experiences.* However, it seems that the impact of the sociological realities described here, serves to awaken or intensify longstanding (and perhaps dormant or only partially mobilized) feelings of doubt and inadequacy.

Midge, a 16-year-old girl multiply-handicapped from anoxia at birth, was such a case. Her main handicap is her intellectual retardation, as she functions with an IQ of 79. She also displays a mild cerebral palsy with both external strabismus of the right eye and paralysis of the muscles of the soft palate. EEG study revealed "an abnormal tracing due to grade IV, diffuse, generalized cerebral dysrhythmia, exaggerated by photic stimulation. No localization apparent." Her severe speech nasality, due to partial paralysis of the soft palate, and her impulsive personality, with projection and denial as her principal ego mechanisms of defence, have kept her from achieving maximum use of her dull-normal potential. She seemed caught up in a conflict with her mother which she could not work through, and at the time of admission two years ago was fixated at a pregenital level of ego-development.

Individual psychotherapy provided a beginning wedge into the conflicts Midge felt in relation

VOL. 2 1961

to her mother. She sensed her mother's disapproval of her, which she interpreted as rejection. Her inability to bear this feeling made Midge attack her mother verbally at every opportunity. The mother's guilt led to vacillation, which only resulted in perpetuating their struggle.

Counselling for the mother consisted of helping her reconstruct how the pattern of their relationship had been established. She was helped to realize that Midge's father had unconsciously trapped her into carrying a negative, disciplinarian role in regard to Midge. Out of her guilt and the nature of her relationship to her husband she had allowed this to happen. This realization freed the mother to say that she didn't want to hurt Midge, but she really didn't like her much of the time. Still she wanted to do all she could to help her. Finally, for the first time she recognized that her tendency to vacillate failed to confront Midge with a consistent maternal attitude, which could then allow change in their relationship to take place. The mother's insight gained in these areas freed Midge to ask herself why *she* became so angry with her mother, and what she could do about these temper outbursts. In doing so her behaviour became more even and less violent. She consciously went to work trying to be liked, while she talked out her feelings in therapy and in her school unit as she felt them building up.

Midge asked at this time if she might be confirmed in the church and faith of her parents. The whole confirmation experience seemed to be one of affirming her young womanhood, and her place in the family and the culture in which they lived.

At this time she was evaluated for a post-pharyngeal flap operation to decrease the nasality of her speech (Randall, 1960). She took an active part in the decision to accept surgery, and its completion helped decrease one area of her ego-image distortion which had plagued her for years. The experience during surgery and hospitalization allowed her mother to connect positively with Midge for the first time. Also in this experience Midge realized a healthy satisfaction of her dependency needs, which has strengthened her move toward a positive female identification pattern.

Midge now seems ready to take on a full-time job experience in our school setting as part of her vocational training programme. She has a realistic perception of what she can do in this world, and do well. We feel that out of this total management approach she has taken a major step toward self-actuation.

Another psychological conflict which fits into this apparent syndrome of prolonged emotional dependency, decreased learning capacity and ego-constriction, as described above, is the extensive preoccupation with feelings of 'being different'. Our brain-damaged teenagers are constantly comparing themselves with older or younger peers or siblings. Admittedly, this conflict is one which is felt by almost everyone growing up. Yet it is felt more intensely where there is a realistic disability affecting the pattern of personality development.

Jill is a 17-year-old girl handicapped by a viral insult (Rubella) to her developing brain during the third month of foetal life. When she entered the school two years ago she was a negative, demanding, whiny adolescent. Much of her personality was geared to an oral-aggressive organization. Her sexual life was expressed in primitive fantasies and crude language designed to shock and impress. Under this façade, Jill appeared socially and emotionally to be like a 6 or 7 year old. Her intellectual functioning was equivalent to a mental age of 9 years, or an IQ of 64. For years Jill had been successful in denying her disability and her difference from other children. She had isolated herself from other girls to lessen opportunities for comparison. Her life was focussed on tomboy activities, periods of sullenness and violent arguments with her mother.

Jill brought the full force of her infantile needs into the group living situation. She forced each girl in her group to give her evidence of mothering and love. She rocked their emotions by breaking off with them at the slightest provocation.

Gradually, in her individual therapy she could ask why she kept hurting the girls after she had become pals with them. She came to see her emerging pattern of seeking a mother-person to love and to hurt. Strong overt rejection of her own mother ensued. First, she denied that her mother was her real mother, insisting that she was an adopted daughter. Later she wanted to

leave her family to be adopted into another. Significantly, the force and duration of these painful thoughts were out of all proportion to the quality of parental support she had been given while living at home.

Dramatic relief came to Jill the day she realized that she was jealous of an older sister who had grown up without a disability. She could then reveal that all her life she had thought her mother preferred this sister to herself. She felt she was different from her sister, and because of this difference her mother couldn't love her.

Jill shared these fears and doubts with her mother and father. She had always so excluded them from her life that they couldn't reach her with their love. Now, she was ready to ask them how they felt about her, and they were ready to let her know that they had always loved her as their daughter. They were equally ready to support her need and readiness for a pre-vocational training programme which would take her away from the college door through which the older sibling had moved, but would bring her into the world of young adults who could achieve at a lower-level job.

Jill's movement toward a heterosexual pattern of adjustment was prompt, but frightening to all. Over the Summer vacation she allowed herself to 'be picked up' at an amusement park. Though she did not submit to the sexual advances, the midnight ride threw her parents into near panic. Jill immediately moved back into her old defence of denial, isolation and sullenness. Fortunately, her vacation was nearly over and her treatment in the school setting was resumed in a matter of days. At this point she was able to share with the therapist her need to be loved as a woman, as well as her new-found fear of men.

The structured co-educational school setting could allow Jill to find a more balanced relationship with boys. Her sensitivity to difference in boys and girls was greatly increased, and she became socially adept at handling her own sexuality.

Jill still has a long way to go, but she has made significant growth strides in two years. Her present mental age of 11 years (functioning IQ 72) is several years behind her chronological age. Nevertheless, Jill is a teenager in all aspects of her social and emotional growth.

VOL. 2 1961

THE TREATMENT PROCESS

From these four cases, and others we have worked with over a period of several years, it appears that the treatment process in our residential setting unfolds in a definite pattern.

There is the initial opening-up of the problem, as mobilized by our pre-admission evaluation process. This is followed by an intensified period of working on and through the emotional problems, in individual or group therapy. Concurrently, there is the need for timely help to parents, and to the residential staff responsible for the students' emerging growth potential in the daily living experience away from home.

In each instance, though the patient was in a residential programme some distance from his home, it was essential that the parents be helped to some new position in relation to their child. Helping parents understand the dynamics of their child's needs, or their own problems in relation to the child, consistently enabled the adolescent in therapy to move to a higher level of psychosocial development.

It should be emphasized that the therapeutic potential of residential treatment is not alone in placement away from home and apart from parents. Rather, the new force and potential must be carried by the residential staff of adults, who represent a different reality to troubled brain-damaged adolescents. These houseparents, teachers and other supporting staff must be ready to allow and encourage emotionally disturbed children to bring their conflicting feelings into full view, while defining for them how these feelings may be expressed in socially acceptable behaviour.

In a residential treatment programme, constant, open and honest communication of feelings and observations among the residential staff as to how each child is using this new individual and group living experience is *imperative*. The focus of this communication must be on the continuous definition of levels of patient need and staff expectation. Between these two poles of human experience lies the path of healthy ego-development.

CONCLUSION

It is clear that the residential school must be alerted to the need of preparing those students, in its population who are at a pre-teenage level of biological as well as psychosocial maturation, and their parents to meet the impending conflicts discussed here. This paper suggests that such a need can be met through skilfull and timely help to parents and through a therapeutically oriented group living situation. This experience may or may not need to be supplemented by individual and group psychotherapy, according to the nature and degree of personality problem, and to the degree of parental support of the brain-damaged child in his efforts toward mastery, adaptation and self-realization.

SUMMARY

This paper has emphasized that intrapsychic conflicts and attempts at mastery of or adaptation to disabilities related to brain damage in the adolescent are similar in kind to those of the non-brain-damaged adolescent but may differ in degree and intensity. Some of the specific conflicts illustrated by case material include ego-identity, self-concept and body-image distortions; the impact of reality which comes with adolescence; prolonged dependency, delayed adolescent strivings and attempts at definition of sexuality; vocational concern; and the uses of a residential setting in the process of management.

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APPENDIX

THE accompanying tables represent data obtained as part of the routine psychological examination (including the Wechsler Intelligence Scales for Children and Adults and the Rorschach Personality Inventory) on 36 brain-damaged boys from the total population of our upper school unit, ranging in age from 10 to 22 years. Comparable data were collected on a group of 70 non-brain-damaged adolescents in the 10th grade of a Trenton, New Jersey, High School, ranging in age from 15 to 16 years.

As seen in Table 1, the coding mean score in the brain-damaged group is significantly lower (4·4) than the group mean score (6·43). The coding mean score (14·0) in the non-brain-damaged group is approximately equal to the group mean (14·92). The Wechsler Coding subtest is considered

a test of learning and visual-motor function. Since the levels of visual-motor performance are within the standard deviation (0·83) one may infer that the significant deficit shown in the brain-damaged group's coding mean score is due to a limitation in the specific learning ability required for this task.

Comparative Rorschach data in these two groups appears to confirm the second clinical observation of delay in psychosocial development (Table 2). In the brain-damaged group the mean $F\%$ response is considerably higher(57.5) than in the non-brain damaged group (45·0). There is also a reduction in the number of Rorschach movement and shading responses in the brain-damaged group as compared to the non-brain-damaged group. The interpretation has been made that a high $F\%$ and a small number of movement and shading responses are associated with problems of ego-control in which constricting and repressive mechanisms are utilized to limit conscious expression of feelings, emotions and impulses in patterns of appropriate behaviour. (Klopfer *et al.*, 1954).

TABLE 1. COMPARATIVE INTELLIGENCE TEST SCORES

	Woods schools (Brain-damaged) $N = 36$	Trenton High School (Non-brain-damaged) $N = 70$
Age mean	14 years, 2 months	15 years, 3 months
Mental age equivalent	10 years, 7 months	19 years, 4 months
Subtest scores (Wechsler Intelligence Scale)*	(Mean scores)	(Mean scores)
Information	7·0	14·7
Comprehension	6·0	15·1
Arithmetic	6·5	13·9
Similarities	6·5	15·0
Vocabulary	7·0	15·2
Digit Span	7·8	13·1
Picture Completion	6·5	14·3
Picture Arrangement	5·7	12·6
Block Design	6·8	12·9
Object Assembly	6·5	12·3
Coding	4·4	14·0
Verbal IQ	78	129
Performance IQ	72	122
Full Scale IQ	75	128
Group Mean Score	6·43	13·92
Standard Deviation	0·83	1·00

*Actual Standard Score Means derived from both Wechsler Intelligence Scale for Children and Adults.

VOL. 2 1961

In making a comparison between the Rorschach findings of our two groups and those responses obtained by Nettie Ledwith on normal 6- and 11-year-old school children seen in the Pittsburgh Child Guidance Clinic (Ledwith, 1959), we found that, with the exception of the mean $F\%$ response, the responses of our brain-damaged adolescent population were more comparable, in their Rorschach responses, to those of the normal 6-year-old group than to those of the 11-year-old group in the Pittsburgh Study, or of the Trenton High School non-brain-damaged adolescent group.

TABLE 2. COMPARATIVE RORSCHACH SCORES*

	Woods schools Population (Brain-damaged)	Pittsburgh study 6-year olds	Pittsburgh study 11-year olds	Trenton High School (Non-brain-damaged)
Responses	18·50	16·5	30·1	23·4
M	1·32	1·1	3·0	3·5
FM	2·35	3·0	3·6	4·0
m	1·32	0·3	0·5	2·3
Sum of movement	4·99	4·4	12·1	9·8
Fc	0·38			2·3
cF	0·73			1·0
C'	0·89			0·5
K	0·32	0·3	0·6	1·0
Sum of shading	2·32	1·7	2·3	4·8
FC	0·62	1·0	2·0	1·0
CF	1·67	2·2	1·0	2·2
C	0·52	0·7	0·0	0·0
Sum colour responses	2·81	3·9	3·0	3·2
F	10·70	7·0	12·0	10·5
$F\%$	57·5	42·0	44·9	45·0
W	7·73	7·3	8·0	11·5
D	7·73	8·5	18·0	9·0

*Following the Klopfer method of Rorschach Scoring.

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VOL. 2 1961

BOOK REVIEWS

RENE ZAZZO: **Manuel pour l'examen psychologique de l'enfant.** Actualités Pédagogiques et Psychologiques. Delachaux et Niestle, Neuchatel, 1960. pp. 435, 25 Swiss francs.

THIS highly competent manual brings together a number of test methods which Dr. Zazzo and his collaborators at the Hôpital Henry Rouselle have evolved over the past ten or twelve years. They are divided into four main groups: motor organization (laterality and praxis); spatial and temporal organization (rhythm, right-left discrimination, finger gnosis, block-design and Bender Gestalt); psychomotor efficiency (speed and discrimination), and personality (perseveration and a new verbal projection test). These tests have been standardized for the 6–14 year age-range and are intended primarily for clinical application.

It will be clear that the tests chosen reflect an obvious concern with maturation in its higher neurological aspects and will obviously interest paediatric neurologists and others concerned with the assessment of types of backwardness other than those conventionally ascribed to defect of intelligence. Among these are backwardness due to early brain injury, so-called developmental dysphasia, dyslexia, and dyspraxia, and perhaps also failure in maturation apparently due to emotional deprivation or psychological stress. While these new methods merit widespread application, it should be clearly understood that they complement, and do not replace, the standard tests of intelligence and scholastic attainment in current use.

An English translation of this manual, perhaps slightly shortened, would be welcome.

O. L. ZANGWILL

BETTY M. FLINT: **The Security of Infants.** Toronto, University Press, 1959. pp. x + 134, $3.75.

CHILD-CARE agencies in the United States and Canada are far more ready to make use of psychological services in placing children than is found in Britain. The author of this book has for many years worked in this field and thus acquired a wide experience of the problems involved in evaluating infants for purposes of adoption. This work has convinced her of the need for a scale which would evaluate the mental health of infants in the same way that Gesell schedules evaluate cognitive development, and she therefore set out to construct such a scale and base it on an explicit theory about the nature of mental health in infants. An admirable aim!

Unfortunately much is to be criticized in the carrying out of these ideas, both with regard to the construction of the scale itself and with regard to the underlying theory. As for the latter, the author has taken Blatz's Security Theory and attempted to adapt it to the age range (from birth to 2 years) with which she is concerned. Most of the shortcomings of the book arise from this attempt. Although certain modifications have been made to allow for the fact that infants differ from adults, all the basic concepts remain: security and insecurity, deputy agents (Blatz's term for defence mechanisms), self-worth and self-trust, and so on. But what is the meaning of self-worth when applied to an infant of six months who has as yet evolved no concept of self? And does "security" mean the same thing at two months as it does at two years, and can it (as the author believes) be evaluated in the same manner at both these ages? Shrinking Blatz's theory down to infantile size is bound to lead to

anthropomorphism, as we find when we turn to Mrs. Flint's discussion of case material, and are there frequently confronted by a vast gap between data and interpretations.

The theoretical orientation suffers, moreover, from too narrow an interpretation of the notion of mental health in young children. Mrs. Flint has worked a great deal in institutions, and is thus very much aware of the consequences of maternal deprivation. She tends therefore to see all mental ill-health in terms of inadequate mothering, and this gives her theorizing too narrow a basis. Thus she quotes at length and with approval those much-criticized authors Ribble and Spitz, yet neglects entirely such penetrating and important work as that of Escalona and Wolf. To evaluate mental health at this age largely in terms of interaction with the mother may be sound procedure, but the disturbances that occur in this area are of a far wider and more subtle nature than those associated merely with too little mothering.

As for the scale itself, the methodology of its construction is in many respects inadequate. For one thing, a try-out of the scale will show that many of the items are inadequately defined and need considerable interpretation when scoring. The definitions are couched in terms of feeling tone rather than of observable behaviour, thus raising queries about the inter-scorer agreement which one may expect on such a test. These queries remain unanswered in the book. A further objection refers to the rather questionable manner of selecting items as reflecting mental health or ill-health. "Responsive to social stimulation from strangers", for instance, within the age range of 6–12 months is taken to reflect mental health, yet such behaviour is surely far more characteristic of deprived infants, who rarely show the negativism to strangers that is almost universally found among "normal" infants at this age. Again, the validation of the scale was poorly designed, for the two groups of comparison were evaluated by different procedures and were so few in number that, for the validation of the scale for the first 6 months, only two children were found in one group and six in the other. Finally, in the absence of norms, the interpretation of case material given by the author is bound to be attended by uncertainty as to its significance.

The author herself is aware of some of the inadequacies of the scale, and stresses the interim nature of this report and her continuing work on revision. She would, however, have been better advised to have delayed publication, for in its present form the scale is unlikely to have much appeal. That it measures *something* becomes apparent, for instance, from the steadily decreasing scores of infants during prolonged stays in institutions, but what this is does not emerge. A more suitable theoretical framework might well have helped in this respect.

H. R. Schaffer

Everett Ostrovsky: **L'Influence Masculine et l'Enfant d'Age Prescolaire.** Delacheux et Niestle, Neuchatel. pp. 190, 8 Swiss francs.

The author of this book is a graduate of New York, and a doctor, in child psychology, of the Sorbonne. It is written about American children, mostly just under five years of age on admission, so presumably the "École Maternelle" in which they are taught corresponds to kindergarten or infant schools.

The author has the following ends in view: to estimate the importance of paternal influence in the development of young children; how this affects the personal and social adjustment; what contributes to the child's conception of the male figure, and how this affects his relations to his 'ego', to his peers, and to the adults round him.

His method has been to observe and take daily notes, over the scholastic year, of children whom he has been teaching. Of these he selects eight cases; the first four demonstrating the effects of partial absence of the father at work, etc., and the second four the effects of complete absence through death, divorce, etc. A clinical description of each of these cases is given in the space of ten or so pages, and they are then discussed in detail, and together. They are of course related to his own role as teacher and father figure, and show the changes that occur in the course of this relationship. It is his final

intention to demonstrate that the nursery or infant school is a desirable and sometimes necessary complement to the family: provided that they contain male teachers, which is rarely the case.

To indicate the importance of the father, many quotations are given from English and American authors pointing to his comparative neglect in the clinical study and treatment of problem children; he is only brought into the picture when practical difficulties arise and render his presence necessary and obvious.

Of the case descriptions, I found the one of Judy to be the most interesting (the author does in fact give her the largest allocation of pages). She was 4 years and 7 months on admission to school, and had lost her father at the age of 2. At first she seemed quite lost, then went through various phases in her attempts to find acceptance and security amid her companions. She would bring various objects and show them round, inventing stories about them, and indulging in all sorts of fantasy. She then invented a father, but also started to take an intense interest in the author, finally calling him "papa". Before this however she had a brief period of depression, when the other children saw through her fantasied father, and she had to stay away from school. On her return she was made to feel wanted, and was then able to accept the author as a father figure but also as a separate person who was her friend. The author points out how the various 'scaffoldings' successively crumpled; to be replaced by firmer structures whereby she gained reality and acceptance.

The question arises whether the type of behaviour observed can in fact be related directly in all the cases to the absence of a father, or to what extent it depends on other factors. In general the picture seems clear enough and the connection is seen not only in the changing phases of behaviour, such as the various facets of compensatory mechanisms, but in the pattern which emerges as the male figure exercises progressively his beneficent therapeutic role.

VOL. 2 1961

In an Appendix, Dr. Ostrovsky links his subject with the 'Oedipus complex', as is to be expected, and also with the question of the child's identification with parental and other adult figures, pointing out how these processes may be interfered with through the absence of the male parent.

The clinical descriptions and their analysis illustrate one type of approach to such problems. Another type of investigation, such as a series of cases with controls, duly examined by statistical means, is often a necessary complement to the former. Such a study has recently been done by Dr. Andry, which is described in his book *Delinquency and Parental Pathology*. This study, though dealing with a different aspect of behaviour at much older ages, does appear to support the thesis of the book under review.

Mention might also be made of a recent study* of what the authors term an "isolation pattern" in fathers of emotionally disturbed children. The fathers seemed to be functioning as mere extensions of the mother's ego, in a kind of unconscious collusion, until taken into the treatment situation. One wonders whether this only applies to American fathers!

It would indeed be a fascinating study if the author were to exercise his powers of observation and deduction among French or Swiss children of similar age, to see how far cultural values would impinge on the more universal factors in development. There the fathers appear to be in the ascendant —which is not to minimize the importance of the mother. This book vividly draws our attention to the subject, and although the author modestly surrounds himself with many quotations from an extensive bibliography, the presentation of his thesis can well stand on its own right.

C. L. C. Burns

Robert G. Andry: **Delinquency and Parental Pathology.** Methuen & Co. Ltd., London, 1960. 21s.

The concept of maternal deprivation as an important aetiological factor in delinquency has received such widespread acceptance that it has in some quarters been reduced to the level of a cliché. Barbara Wootton, in an excellent critique of studies on the effects of maternal separation or deprivation, comments that in some Juvenile Courts it is standard practice to ask if the young person, who by the

*Plotsky and Shereshefsky (1960) *Amer. J. Orthopsychiat.* **30**, 4.

time he reaches Court may be over 16, has been separated from his mother for any appreciable period in infancy. It therefore comes as a refreshing change to find a research worker examining other aspects of parental pathology, and even going so far as to inquire into the role of the father in the formation of delinquent patterns of behaviour. Similar rethinking is, of course, taking place among many criminologists.

Dr. Andry presents a clear, succinct and very readable account of his research into the roles of *both* parents in the aetiology of delinquency and the child's perception of these roles. The technique used was a personal, individual interview of a test sample of delinquent boys and also of a carefully matched control group of non-delinquent boys. All neurotics, psychotics, mental defectives and children from broken homes were excluded from both groups. Each subject was interviewed and asked to answer a questionnaire relating to: favouritism of siblings; parental work record; delinquency; physical separations from home; infant habit-training; parental affection; emotional climate in the home; discipline and punishment; general stress reactions; sociability and general environmental communication with the parents (covering such matters as hobbies shared with them and the amount of leisure time spent together).

As a check on the validity of the statements, a sub-sample of 30 subjects in each group was selected; *both* parents of each boy were interviewed and the same questions put to them. The resulting data were treated statistically by the Chi-square technique, the 5 per cent level of confidence being adopted as the criterion of significance. Although the data are tabulated in detail, the actual Chi-square values are not presented, only a statement of whether each difference fell above or below this modest level. In fact, recalculation revealed that some of these differences were significant at the 0·1 per cent level or beyond, a fact which should surely have been stated.

The main findings were that: delinquents receive less strong and open love from their parents than do non-delinquents—*but especially in the case of their fathers* (our itali s); both parents of delinquents were viewed as inadequate in environmental communication by their sons, whereas both parents of non-delinquents were viewed as adequate; the fathers' psychological communication was viewed as inadequate among delinquents but adequate by the controls. Delinquents experienced, in general, inadequate and tense emotional relationships with their fathers, but to a lesser extent with their mothers, whereas non-delinquents had, in general, adequate emotional relationships with both parents. No differences were found between the groups with respect to maternal training in infancy, but significant differences were found with regard to later training by both parents, especially fathers, this being less adequate in the case of delinquents. Truanting and stealing were found to be more widespread and to have started at an earlier age among delinquents than their controls; the parents of the former were less aware of this behaviour, and less adequate in dealing with it, than the parents of the latter.

In summary, this is a very valuable contribution to the literature on delinquency, and indeed, on deprivation. It is strange that so many psychoanalytically inclined research workers have concentrated on mother-child relationships, when psychoanalysis itself has always had so much to say about the role of the father. This book begins to redress the balance, and subsequent work in this and related fields is tending to confirm Dr. Andry's main thesis.

A. M. Clarke and A. D. B. Clarke

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A CLINICAL APPROACH TO PARENT-CHILD INTERACTION

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VOL. 2 1961

This paper is based on experience gained in working in an ordinary Child Guidance clinic. The staffing is in the traditional pattern, with educational psychologists, psychiatric social workers, a child psychotherapist, and a part-time psychiatrist assisted by a registrar. The purpose is to formulate some of the problems encountered when trying to explore the parent-child relationship in this particular setting, and to describe some methods of deployment that have been found useful in meeting these.

The concept of 'the parent-child relationship', long coined, has passed in circulation from the conversation of psychologists, through members of related disciplines, and into the usage of sophisticated parents. In some ways its wider use has debased it, and the term often functions as a shibboleth, covering ignorance of the complexity of interpersonal interplay. It is not without interest to look back and see how the concept has been developed and applied in the practice of child psychiatry. The essential exploratory studies of parental attitudes by Laws (1927), Levy (1931), Rosenheim (1935), Tucker (1940) and Lafore (1945) enriched our thinking on questions of aetiology, but by providing for easy application labels such as rejecting, perfectionist and overprotective, have tempted the clinician towards blanket judgements, and increased his occupational tendency to identify with the child in the clinical situation. Kanner's statement (1953) that a thorough-going psychology of attitudes still remains to be worked out holds true today, and while the descriptive level of analysis of parents' attitudes has a broad diagnostic usefulness, it often fails to do justice to the complex dynamic forces at work in the disturbed family. The use of our operational concepts in the treatment of parent-child relationships has a history which also suggests uncertainty. As Green (1948) has summarized it, the first step was a pattern of advice, suggestion and teaching—the manipulation of parents for the good of their child. The next was the direct psychological treatment of the parent, as a person with his own problems. There followed the direct psychiatric treatment of the child, with ensuing uncertainty as to what to do about parents, leading on to the pattern of the simultaneous approach to parents and child as elaborated by Dawley (1939), with the concepts of interaction and interrelated movement, and focussing upon the relationship between parent and child, rather than upon either separately.

From this developed the interest in the parent in his role as parent, which has proved so instructive and therapeutically rewarding.

The contributions of psychoanalysis to the understanding of parent-child interaction have been invaluable, but at the same time have posed problems for clinical practice. A full review of these contributions is beyond the scope of this paper, but a few major points should be recalled. Ferenczi (1949), in a classical paper, made the

following formulation: "The most important change, produced in the mind of the child by the anxiety-fear-ridden identification with the adult partner, is the *introjection of the guilt feelings of the adult* . . . which makes hitherto harmless play appear as a punishable offence. When the child recovers from such an attack it feels split—innocent and culpable at the same time—and its confidence in the testimony of its own senses is broken. . . ."

Johnson and Szurek (1952) describe how "the parent, or parents, usually unconsciously, sanctioned and fostered the child's acting-out of the parents' poorly integrated forbidden impulses", and found that treatment often came to a standstill, or matters became worse, unless the significant parent was also under treatment. Johnson (1953) concludes: "A child is held at a certain level of fixation for two major reasons: (1) fear of something from which it regressed or which kept its development arrested; and (2) sanctions from one or both parents encourage the child to achieve instinctual gratification at the level where the child became fixated".

The importance of such concepts for ordinary child guidance practice can be illustrated by the following brief clinical extract. An 8-year-old girl was taken into psychotherapy for severe nocturnal anxiety symptoms. Her mother, a mature and conscientious woman, visited the psychiatric social worker regularly, and supported the treatment in every way. The father attended separately. He impressed the psychiatric social worker as an odd, disturbing person, and used his interviews to talk in a child-like way about the perfection of his first marriage, ended by the death of his first wife. He gave the impression that there were difficulties in the present marriage, but it was hard to get this clear.

The girl's psychotherapy was going well, and at one stage she revealed that her 14-year-old half-brother had been, for some considerable time, interfering with her sexually. Efforts were made to get him to attend the clinic, which failed. Next he ran away from home, stole and was placed on probation, as a result of which it was possible to see him at the clinic. His father brought him, and it was interesting that a woman staff member, meeting the father for the first time, told us "he gave me the creeps". The boy was intensely resistant to admitting any difficulties or need. He was seen regularly for a period in an attempt to lessen his resistance, without much success; then the probation officer sent me a collection of primitive, lewd drawings, mainly of fellatic scenes, which the lad had made and given to him. Talking about this, the father revealed that he knew that the boy drew such things, and that he often took the drawings from him and kept them in his own room. He also mentioned that his son had started bringing home pornographic books, and talked about these in a salacious way, which made it clear that he got considerable vicarious satisfaction from them. It proved impossible to draw this father further into treatment, and the boy consented only to a supportive contact, although his sister went through with her therapy with a successful result.

The problems posed by this level of parent-child interaction for planning treatment in the child guidance setting are numerous.

(1) Even if the significant parents can be identified early in the diagnostic procedure, and will consent to involvement in treatment, they rarely accept the need for analytically-based treatment in their own right, given that such treatment is available.

(2) If the psychiatric social worker is called upon to work with the significant parent, she is not normally equipped to do so at the analytical level, which means that she cannot do so at the level on which the psychotherapist is working with the child.

(3) If mother and child are being seen in parallel by psychiatric social worker and psychotherapist, after the common pattern, there remains the problem of adequate communication between the two workers to permit proper understanding of the interaction and interrelated movement that may be revealed as occurring between mother and child. In most clinics an attempt is made to ensure such communication, but this is often handicapped by lack of time, and communication may further be impaired by the tendency, recognized but yet persistent, for each of the workers to identify with 'her patient'. The difficulty is increased by the scotomata to which even the most experienced therapist is liable, and by the complexity of 'interactive' material, which is always more than the simple sum of the material seen by psychotherapist and psychiatric social worker.

Our efforts to meet these difficulties seem to have led to two main trends in our general deployment techniques:

(a) The focus of the intake and diagnostic procedures upon parent-child relationship and interaction: and (b) a consequent flexible policy in the planning of treatment. Here, illustration will be confined to two types of procedure only, and no reference will be made to four-sided interviews, group methods of treatment, or 'family therapy'.

VOL. 2 1961

CASE I

In this, the child was treated by the psychotherapist, while the mother and father were seen alternately by the psychiatric social worker. There is nothing very new about this, but the case illustrates some complexities, and highlights the importance of interrelated movement. It also demonstrates the re-emergence during treatment of the main themes delineated in the psychiatric diagnostic interview. In cases of this sort, it has been found essential to establish a routine of regular case-discussions. In these the psychotherapist and psychiatric social worker report the patterns of their interviews in detail, while the psychiatrist tries to focus on highlighting the interactive elements, and the team as a whole discuss the therapeutic use of the material.

Mary, aged 5, was brought by her mother because of wetting by day and night, severe face picking which had disfigured her cheek, nail-biting and sleep disturbance. At the first contact I was struck by the contrast between her bedraggled appearance and woe-begone air, and the mother's smartness, brightness and poise. Mary indicated that she wanted to come to the interview with her mother. Mother perched herself on the edge of a chair while Mary stood, inert and uneasy, a few feet away. The interview was tape-recorded, and transcribes as follows:

Mother suddenly drops her poise, leans forward and speaks with an anxious rush:

"This might sound as if it all worries me, but I don't regard it . . . as deep-rooted. But it is extremely annoying." She glances at Mary and goes on: "We both get on each other's nerves from time to time . . . she has a brother older than herself, and they . . . are normally jealous of each other. If anything, I would say that he is

probably more jealous of her. I rather think—though I can't think why—I have thought about it so much that I have come round in a full circle—that our housing conditions have something to do with it." Here the mother's rate of speech slowed perceptibly, she leaned forward, and went on in a soft whisper: "Because until the past few weeks we have all shared the same room." Here Mary moves for the first time, turns her back upon us, and listlessly handles some toys in the cupboard. The mother goes on: "The children don't sleep well . . . not really . . . recently my husband and I have moved into the lounge to sleep . . . because we must do something . . . the children must sleep by themselves."

With this, her anxious flow ceased, and she sat silent and preoccupied.

I say: "You found it upsetting, them sleeping in your bedroom."

Mother responds: "I do think so . . . it was upsetting all of us really."

Having said this with feeling, she moved back in her chair and seemed about to withdraw.

I ask: "How?"

The mother leans towards me again, and goes on in a rush:

"Well, I found it nerve-racking. One can't go to bed . . . from a purely personal point of view . . . our sex life is limited in many ways because one feels the children might be disturbed, might overhear things it wasn't desirable for them to hear. They come into our bed a lot; in fact it has stopped a bit since we moved into another room, but they still come in a fair amount." Mary is now clearly interested in what is being said, but she keeps her back turned and plays with some blocks.

I ask: "Why did you decide to move into another room recently, Mrs. X?"

Mother: "Well, we didn't feel like eating and sleeping in the same room. In fact, we thought all the time that we were going to move. We've had disappointments . . . a lot. It's just one of those things—one finally comes to a decision. For one thing, we didn't want to buy a studio couch, because we are so overcrowded that an additional piece of furniture, er, er," (here she giggled anxiously) "er, limits the amount of room the children have got to play in. I don't know whether I ought to explain about the feeding difficulty . . . she's difficult about it. I was never able to breast-feed her right from the start." (This was said with real feeling of regret.) "This was in spite of the fact that I wanted to. I did breast-feed my other child. She never . . . right from the start, liked having the bottle, whether it was in the first instance she didn't like the bottle, and then she didn't like me giving it, I don't know. But when she was about three months they decided to take her into hospital to observe her." (Here mother's voice sank to a whisper, and she showed overt depression.) "They found there was nothing wrong with the food she was having, she just liked small quantities, and as far as I could tell, after she settled down she began to feel alright. When she came out she had improved somewhat, but she didn't seem to like being fed by me, because when she came out she was at the mixed feeding stage anyway . . . I was beginning to feel a bit touchy about it. I have exaggerated I'm sure, but that is how it seemed . . . however, apart from feeding, we got on quite well until for the last eighteen months she has become more . . . well . . . difficult and defiant—more than usual I would say . . . but it started with the feeding."

I say: "You were able to feed the boy, but not Mary. What actually went wrong?"

Mother: "Well, I didn't appear to have very much milk, and I started a high temperature and was threatened with a breast abscess . . . the milk was not coming through as much as it should, as far as I could tell, and well, I don't know, it's not for me to criticize, but they just gave me some tablets to draw the milk from me. I felt all the time they should have got round it somehow. However, that was only a personal opinion."

I say: "You were very keen to get it right, and disappointed with the help you got."

Mother: (with much emphasis) "Yes—that was it. I felt it was really mishandled a bit. It's awfully difficult to put into words, but I feel that a mother should feed, and so many mothers don't want to. They take what I feel is the easy way out, and bottle-feed their babies." With a rising intonation she goes on: "Somehow, I feel a stronger . . ." (she blocks) ". . . I just feel it's very important."

I say: "You feel that the feeding difficulty has made something wrong in your bond with Mary."

Mother: "No . . . I didn't at that time . . . I don't think I did . . . but I feel it was important that the child should . . . everything had gone on so well—I think. I enjoyed her birth. I did with my son as well. I think it was just disappointment. Everything wasn't stage-managed as well as I hoped it would be."

I say: "You felt it as a failure."

Mother: "Yes . . . I suppose so. I wanted a girl. Not that badly that I would have minded if I'd had a boy. I just thought it would be nice to have a girl!"

Here she went into a long silence, and appeared to withdraw a little. Mary was by now playing more actively and with some signs of pleasure.

I say to mother: "And you feel that all went well until that breast-feeding?"

Mother: "Well, I don't want to lay undue importance on that. I soon forgot all about it because of the other problem of feeding her at all."

I say: "Mary didn't forget about it. She went on being difficult about food."

For the first time Mary responded directly, looking at me with a wry smile.

Mother: "Being difficult, yes, and also I was unhappy about where I was living. I am still at the same place of course, but things are rather difficult with us. I was very unhappy, and things were difficult all round, so that until she was about six months it was a pretty unhappy period anyway."

I say: "You sound from what you say that you were very anxious to be a good mother."

Mother: "Yes, I think so. I think probably it is because I always want to do the right thing. Then, I imagine, so does every other mother, either subconsciously or consciously."

At this point, Mary, who had found a funnel amongst the toys, approached her mother with it and made a noise through it, at which the mother laughed uneasily, and said "It sounds like a megaphone".

I say: "You feel that this wanting to do the right thing is a problem for you."

At this point Mary blows more loudly at her mother, making a noise like "bah, bah, bah".

Mother: "No, I don't think it's a difficulty. The thing I really feel most strongly about is how we lived. Really, I feel very strongly about that. I feel they are not

VOL. 2 1961

having the best. We had better opportunities than they are getting. Well, I think things would have gone a lot smoother if they had more room to play, and I didn't have to say 'don't do this' so often. None of us have got room or scope even to keep our own personal belongings separate . . . I think it's just . . . I don't know . . . I just think one is bound up with the other."

I say: "You feel you had a better start in childhood."

Mother: "Yes, I do. In many ways I think. In a number of ways they have got a better start than I had. Education is better, for example, welfare services and so on, but in home life I think I had a better start. Oh, well . . . I didn't ultimately, because my parents separated and then divorced. It was awful . . . there had been lots of quarrels, and I was sent away to an aunt . . . and when I came back they were separated. I think it was my father, mainly, that was the trouble . . ." (here she tailed off miserably).

I say: "This awful experience of your parents separating must have added to your strong wish to be a good mother and to do the right thing".

Mother: "Well, no . . . I don't think so . . . well perhaps it did."

As the mother thought over this, Mary, who had started handling a toy telephone, came towards us and spoke into the telephone, saying:

"Hello, Daddy, when are you coming home?" She then blew a kiss down the telephone, turned and handed it to her mother, and said: "You talk to him".

I say: "We haven't heard anything about Daddy up till now, but it looks as if Mary wants to tell us about her strong feelings for him, and to share him with you".

Mary begins to giggle here. Mother goes on: "Oh, yes, she's been a terrific Daddy's girl . . . for the last months . . . it seems he can do anything with her". The note of resentment in her voice was quite clear.

I end the interview by summing up, saying that the child's symptoms seemed to be connected with the feeding difficulty and the failure to establish breast-feeding. I add that mother is obviously very concerned to be a good mother, particularly because of the experience of her own parents separating, and that things are made more difficult for her by Mary's present attachment to her father. I promise to consider the problems and to offer a plan of treatment. Mother shows relief and thanks me warmly, and as she leaves takes Mary by the hand.

Following a team study of this interview, it was decided that Mary should start psychotherapy as soon as possible, and that the mother would then be offered casework interviews with the psychiatric social worker. In fact, during some months of waiting, Mary's symptoms improved, except for her sleep disturbance, which became more acute.

Mary's treatment extended over sixteen months, and occupied eighty-nine sessions. The first six produced material mainly expressive of her jealousy towards her brother. Then she introduced telephone play, very like the scrap in the diagnostic interview. In it she expressed love for her father and hostility towards her mother, and this was worked through for a long period. She then returned to jealousy of her brother, but this time in connection with a fairy who was loving towards boy children, but became bad and destructive towards girls. She went straight on to make two rounded mounds in the sand tray. The therapist interpreted that these were breasts, and Mary immediately pretended to suck from them. Subsequent interviews

were concerned with being fed, nursed and loved, and in the transference she showed clearly desires to be fed, nursed and loved by the therapist. On one occasion, she came to the clinic for a psychological test and was not able to see the therapist. At the next visit she showed her much affection, and pointed out a sore place which had come up on her arm the previous night. This was interpreted as having been produced by her feeling at not seeing the therapist, and related to the way in which she used to pick her face when she felt left out by her mother.

Mary attended twice weekly for most of her treatment, and an interesting area of behaviour was opened up by the fact that her mother would bring her to one session and her father to the next. With her father she was demonstrative, affectionate and often openly exhibitionistic and seductive. Towards her mother she behaved indifferently at first, then with overt hostility.

The main themes in the child's treatment can now be related to those emerging in casework with her parents. The mother was anxious from the first that the father should be seen and involved in treatment, and to this he was agreeable. The same psychiatric social worker saw father and mother alternately.

VOL. 2 1961

The themes in the mother's interviews emerged in the following order:

(1) Her feeling of having failed Mary, centred on the failure to breast-feed her. This was elaborated and worked through at various levels, and the mother herself eventually linked it with negative feelings about her own mother, previously idealised.

(2) Her fear, when Mary began to show obvious signs of improvement, that the therapist would get 'too involved' with Mary. This was alleviated by the fact that, following the phase in treatment where Mary showed active desire to be fed by the therapist, she began to intersperse her hostile behaviour towards her mother with brief periods of seeking affection and gratification, ending with asking to be put to bed like a baby, and pretending to suck from mother's breasts. The mother was surprised to find herself able to permit, and indeed to enjoy, this. As her relationship with Mary improved, she would demonstrate this by hanging on to the child before letting her go to the therapist, and even went to the length of dyeing her hair to the same colour as that of the therapist. When the time came to discuss the gradual ending of treatment, the mother herself suggested that "weaning Mary from the clinic" would need careful planning.

(3) Another dominant theme was Mary's behaviour towards her father, his response, and the mother's resentment. She felt that she had to be the disciplinarian, while father enjoyed cuddling the children. He pushed her into the role of dominant father, while she wanted to feel like a little woman and be protected by him. She asked the psychiatric social worker to show father an ivy plant that flourished in her room. When she did so, the father responded, with great feeling: "She arranges flowers beautifully, and then they all die because she forgets to water them. She always either neglects or overwaters, and I've told her for God's sake to leave any livings thing in the house for me to look after."

At one stage the mother began to fear that her marriage might break up, like that of her parents, but gradually became clearer in her desire to take over the feminine and maternal roles in the family.

At the end of an interview in which she had been talking about this, Mary came

into the room and for the first time threw herself on her mother's lap; she had used to do this only with father. The mother mentioned that that morning Mary had invaded their bed, as often, but this time had gone to her side instead of father's. There she had wet, and then rushed to her room, crying. Mother had, quite spontaneously, followed her and comforted her. She began to exercise her maternal role in many ways in the home. This led initially to deterioration in the relationship with her husband, and at one stage she told him that he should leave the family because he was bad for the children. During this phase the mother looked ill and depressed, sometimes avoided interviews and showed a dramatic change in appearance. Her normally tasteful dress became vulgar and flamboyant.

Parallel with this, the father produced the following themes in his interviews:

(1) He talked a great deal about Mary's symptoms, and his conviction that these were rooted in the difficulties of her relationship with her mother. He described how, towards the end of Mary's first year he felt compelled, because of mother's depression and inability to manage, to take over more and more of the maternal role, extending this eventually to doing a great deal of the housework, cooking and so on. He revealed that he was used to this, for he was the eldest of a poor family of boys, whose father had died when he was 14, and he had helped to bring up the youngsters while his mother went to work. The psychiatric social worker discussed with him his anxiety about relinquishing his mothering role, and reassured him of Mary's continued need for him, following which he was able gradually to become more assertive, resumed some of his abandoned masculine activities, and was able to let the mother take over mothering.

(2) He was only able to refer to his anxieties about his relationship with his wife, and about himself, indirectly, by referring to friends who had separated and so on. While relating how he had cared for his younger brothers, he made several references to homosexual sorts of men, with whom his work brought him in contact. The psychiatric social worker dealt with this by saying that such men could often be helpful to deprived children, and the father's anxiety about this subsided. Eventually he was able to express his real concern at the deterioration in his relationship with his wife, and his distress at feeling unable to discuss this usefully with her. She had been expressing similar feelings in her interviews, and before long they found themselves able to talk about their difficulties with freedom, and subsequent improvement.

The value of the treatment conference in a case of this sort is manifest. The complex interactions between child, mother and father become easier to follow when the emergent themes from the interviews are viewed side by side. Further, the dramatic shifts in the behaviour of all three members of the family can be understood only in the light of the material produced separately by each of them. Thus the phase of flamboyant dressing in the mother could be seen to follow the cessation of Mary's overt seductive behaviour towards her father.

The supportive value of such conferencing is also important. Here the psychiatric social worker, in particular, had to withstand the anxiety of the period of threatened dissolution of the marriage, of the mother's phase of depression and acting out, and of the father's oblique but repeated references to a homosexual problem. By focussing on her purpose of trying *to help him in his role as a parent*, she handled the latter problem in a way which proved valuable instead of disruptive.

VOL. 2 1961

CASE II

A second case is presented to illustrate how the diagnostic interview with mother and child may be followed by a combined treatment technique. Carol, aged 11, was referred in the first instance for a fear of medical examination so severe that she had to be anaesthetized before her throat could be examined. She also showed severe feeding difficulties from an early age, fear of dirt and soiled clothing, fear that halibut capsules would poison her, and fears of dying with her many minor upsets in health. The school reported her as very backward in spite of average intelligence, described her lack of self-confidence, and showed real concern about her "hysterical behaviour in which she is really terrified".

We had the information that her mother had gone to work in the school canteen, and suffered from gastric trouble. Three years before referral, the mother's ulcer "burst during the night". It was also recorded that Carol had a sister aged 7, that she had had her tonsils out not long after the mother's serious illness, and followed this by an operation for squint eighteen months later.

First interview

In view of the story of extreme fear of doctors and examinations, I invited Carol to come with her mother to my room. She struck me as tiny, and physically immature for her years, bespectacled, pigtailed and rather plain. Her mother, although somewhat tense, smiled pleasantly and came quickly to my room. Carol crept along the corridor, on the other side of her mother from me, giving the impression of a frightened mouse. Mother walked firmly to the chair next to mine, but Carol stood, rigid, just inside the door. I said to both of them that I gathered Carol was frightened of doctors, and had twice been to hospital for operations, which must have been very unpleasant for her.

The mother burst anxiously into a rather confused story of Carol's fears of illness and dying: "the least little cold, or if she eats anything—she keeps asking me: 'will I die, Mummy?' " After giving a number of instances of this, mother talks about Carol's attitude to her: "She is so difficult . . . so frightfully fussy and faddy about food. She demands this and that. She will not have a plate or a fork . . . says I haven't washed it properly and washes it again herself . . . she's so difficult about her clothes; says that the blouse I have given her isn't clean, and so on!"

Here I feel most strongly the resentment in the mother's description of these symptoms, and note that Carol, although she has not moved, has relaxed a little, and occasionally glances towards us, keeping her head lowered. So I say: "You seem to feel these things Carol does as spiteful towards you: perhaps it is because of this that Carol is afraid she will die."

Mother: "Well, she is so spiteful towards me, and to her sister, Joyce. It wasn't until three years ago—you see, I took ill—I had a haemorrhage during the night—of course we never told the children—Daddy took them to their Granny for three weeks—but I nearly died."

I say: "Carol must have thought for those three weeks that you had died. No wonder she felt upset, if sometimes she had felt cross with you! She must have felt that she deserved to die too." Here Carol moved slowly about two feet towards me, and for the first time looked me in the face. I pointed out this move to the mother

and added: "Although we only know a little about the trouble yet, it looks as if Carol felt I was understanding her".

Mother: "Then she had this operation on her eyes—she made a great fuss about going into hospital—she was very disappointed because it did not make her eyes straight—she still has to wear glasses".

I say: "Perhaps that operation, and having her tonsils out, felt like a punishment to her".

Mother: "She worries about being too small . . . she says: 'Will I be a midget?' The school doctor is always on about how small she is."

I say: "No wonder she does not like having to be examined by the school doctor". Here Carol moves another two feet, and for the first time there is a lightening of her tense, wary look.

Mother: "Then she's so nasty to her sister, Joyce; she did not seem to like it when Joyce was born. I was ill afterwards, and had to send Carol to her Granny."

I say: "So after your haemorrhage was the second time Carol had to go away to her Granny. Perhaps she was worried that again you would be having a baby."

Mother: "Oh, no. I never told her much when I was having Joyce. I knew she would think and dream about it. Daddy has more influence on her than me. She doesn't show affection, and she won't let me be affectionate towards her. She has love, deep down, but a child must be confident towards her mother. She's never been a loveable child . . . she was quite keen to come to the clinic."

I say: "Oh, perhaps she wants to be better able to show affection".

Carol, by this time, is taking open interest in what we are saying, and her eyes look quite bright behind her glasses.

Mother: "I know! I find it difficult myself... my Mum didn't have time for kissing and that . . . mind you, she kept our home very nice . . . Carol likes things nice."

I say: "Having things nice, or wanting things nice, is the way some people show they want to give or ask for love. I feel Carol wants very much to love you and be loved, judging by the way she seems to feel safer since I have been saying how I understood her behaviour."

Mother: "I do lose patience with her, can never satisfy her; she always grumbles . . . wants this or that . . . I feel as if I could murder her!" Here Carol slides round so as to put me between herself and her mother.

Mother: "Of course, I've taken her to this doctor and that doctor, and they've told me different things".

I say: "You feel now that I am trying to understand Carol's difficulties but not seeing how you feel about it all, but I think you both have 'love deep down', as you put it before, and I am sure you both want to get at it. I would be glad to try and help you."

This ended the first interview, and at departure, the mother smiled warmly, Carol rather shyly.

Second interview

The mother looked very pleased to be coming, and Carol entered the room without hestitation and stood quietly near us. The mother settled back in her chair as if about to enjoy herself, and announced:

"I think she's improved a little . . . about not being able to express herself. After last time she said: 'I don't like you—I love you', and that night she put her arms round my neck, most loving. She had been much better about clothes—until this morning—but she would not leave this morning until I sewed a button on her blouse."

I say: "Well, perhaps she wanted to look nice. The school doctor seems to have made her feel she was too small."

Mother: "She's better about her food, and she had a cold last week, but did not feel she was going to die. She actually wanted to come here this morning!" (with a surprised inflection). "I told my husband what happened last week—he thought you were going to give her treatment—to ask her questions."

I say: "It sounds as if you felt some resentment at my saying you both needed help with your feelings about each other".

Here Carol moved close to her mother and me.

Mother: "In a sense she has made progress, but she dashed my hopes this morning".

I say: "Well, you still seem doubtful about my way of seeing it all". At this the mother grinned quite amiably.

VOL. 2 1961

Third interview

Carol and her mother both looked quite relaxed as they entered.

Mother: "There's nothing much to tell . . . uneventful week . . . Carol felt sick this morning, began to get panicky, and said she didn't want to come."

I say: "You both probably have doubts about coming and talking to me about these intimate things".

The mother smiled at this, and Carol moved in towards us.

Mother: "During the week Carol has been saying: 'Tell Doctor' about this or that that's happened. She's been pretty good . . . a bit irritating. She dawdles if you're in a hurry. But she hasn't bothered about her clothes or fidgeted so much . . . in all probability it's because things have suited her."

I say: "You sound reluctant to feel that she is trying to please you".

Mother: "Well . . . she is better, but I'd like to take her to a clinic . . . like the throat clinic . . . and see how she did. I would definitely know then she was improving."

I say (firmly): "I don't like that idea. I feel it would be very frightening for Carol."

Here, Carol, who has been standing near, and quite relaxed, begins for the first time to play, in a timid way, with some toys on a nearby shelf.

Mother: "She's eating better. Thank goodness, she's not picking bits out and putting them on the side of her plate."

I say: "She seems to feel safer with you . . . just as she now seems to be able to play with the toys here".

The mother left in apparent good humour, and Carol was able to whisper a "Goodbye".

Interviews three and four

The mother reported good general progress. Symptoms had diminished all

round, and she and Carol were happier with each other. The main complaint circled around Carol's jealousy of her younger sister, Joyce. Carol resented being put in the bath after Joyce, saying that the water was dirty. The mother was able, without help, to show that she could understand this, and to relate it to Carol's demands to stay up half an hour later than Joyce at night.

Interview five

There followed a holiday break of three weeks. The mother showed eagerness to come to the interview, looked happy, and had dressed herself up attractively.

Mother: "She has been very good. She had the 'flu bad at Christmas, but she didn't make a fuss. We didn't have 'Will I get pneumonia? . . . Will I die?' But, this last week she's been reverting back . . . been very naughty . . . perhaps it's because it's been such a long time since we've been here" (wistfully). "This morning was the worst of all . . . all over the blouse . . . she wanted a clean one today . . . although she had a clean one yesterday. I didn't want her to dictate to me . . . threatened to come here without her!"

I say: "You said Carol had been naughty last week because you had not been to the clinic for some time. She wanted to look nice to come to see me."

Carol grins, and nods vigorously.

I continue: "After all, she has been worried in the past because people said she was too small, and she was disappointed about her eyes".

Carol here takes toys off the shelf, and arranges on the desk a father, boy and girl dolls at a table, putting a lady doll in a bed nearby.

I comment on this. Carol says: "The girl should help her".

Interview six

Mother: "A bit better. Exceptionally good. No trouble this morning. She wants me to tell you something in her favour."

I say: "Yes. We've talked before about your trouble in really approving of Carol."

Mother (showing some feeling at this): "Yes . . . unconsciously you do seize on the bad things".

Here Carol moves towards the toys, and mother says: "Do you want to play with the toys, Carol?"

Carol goes on to make various arrangements of soldiers.

Mother: "I think she can always be like this, but sometimes she wants to be the boss. It's like at home. My brother and older sister always wanted to be the boss. I realise that she's like me in many ways . . . I used to be fussy about food when I was young."

Interview seven

Here mother starts by saying: "Carol—do you want to use the toy cupboard?"

Mother (turning to me): "She's pretty good. She's come a bit closer. She used to shrug off an embrace when I sent her off to school; now she says 'Ta Ta' in a nice kind of way. I feel much better about it. She was a bit funny this morning . . . maybe she doesn't feel well. She doesn't want to go back to school this afternoon."

Carol, who has been, with some liveliness, making tableaux with animals, chips in to say: "I want to go to the pictures, but I don't like cowboys".

I say: "It looks as if she's thinking of her angry feelings, but remembers how afraid she was when she thought they had damaged you".

Mother: "Yes, and now she's not getting off to sleep . . . she doesn't want to miss anything . . . she comes down when daddy and I are alone . . . she asks me not to lock the bedroom door".

I say: "Her angry feelings are brought out by feeling locked away from you and daddy".

Here Carol grins, and begins an active fight with two of the toy animals she is manipulating.

Mother: "Yes, and yet sometimes I get really irritated with her. She can be so irritating, wanting things all her own way, ungrateful."

I say: "You both seem to be able to show bad feelings about each other, as well as good ones".

VOL. 2 1961

Interview eight

Mother: "She's had the same kind of fortnight . . . eating well . . . exceptionally well".

Here Carol begins playing actively with soldiers, with obvious enjoyment.

Mother: "She wants you to know that she's eating and sleeping well. She no longer worries in case I lock the bedroom door . . . she wants you to know. She started fidgetting a bit this morning about her blouse . . . she wanted a clean dress on . . . I suppose it's to come up here."

I say: "Well, she probably wants me to think she looks nice, just as she wants you to tell me that she's behaved well. I notice that you too like to tell me that things have gone well, and take care to look nice when you come."

Mother and Carol both smile and relax.

Mother: "There's one thing—the school holiday. Father wants her to go—he says she has to go. She says she will not go."

I say: "What do you think about it?"

Mother: "In my heart I want her to go."

Here Carol, making a cowboy and Indian scene, looks more angry than I have ever seen her.

Mother: "If she did go I would be thinking she wasn't happy, and would cry, as she has threatened me she will do."

I say: "Yet you say you want her to go. Carol seems to be showing her resentment of that by playing this fighting game."

Mother: "It's just that . . . she's so vastly improved . . . I want to make her more self-reliant . . . stand on her own feet. She's never been away from us except when I was ill, and when I had the baby."

I say: "Well, she must feel that being sent away has to do with bad things happening to you".

Carol burst in: "I don't want to go away. I don't want to leave mummy."

I say: "In case she'll become ill?"

Carol: "No. In case I get sick."

I say: "As mummy got sick, and had Joyce, the other times you went away from home".

The next two sessions contained reports of how Carol had gone on a day outing with her school and enjoyed it, without fuss or sickness, and how she had undergone medical examination and inoculation without getting fussed. Mother also spoke a good deal about how she felt that Carol's naughty periods were just normal girlishness. They did not seem so bad; did not worry her so much.

Interview eleven

This, the last session, started with a pleased report from the mother of further evidence of progress in Carol.

Mother: "Something came up the other day about periods. I had dreaded this. But I explained, and she took it quite alright . . . it had been my main worry, because she used to go frantic at the sight of blood. I was sure she'd be upset. I had a terrible shock when my periods started . . . I did not know about them."

I say: "You had a shock when your ulcer burst too".

Mother: "Oh, yes! It must have bled and bled. Vomiting blood . . . it was awful . . . I thought I would die."

I say: "You and Carol have a lot of feelings in common".

At this they both looked pleased.

Mother: "Oh, and she's decided now that she wants to go on the school holiday. We are both glad about it."

DISCUSSION

The use of this technique of joint interviewing has been advocated in recent years for its diagnostic value (Fordham, 1953), but less has been said about the way in which it can be continued and exploited therapeutically. It would be premature to formulate firm indications and contra-indications for pursuing it, but from experience, the following points seem indicative of the value of attempting to handle a case in this manner:

(1) The child's physical behaviour in the joint situation, and in particular the way in which his response to interpretations suggests a diminution or increase of anxiety. Thus in the first intervew in the last case, I began to feel that useful work might be done when, on interpretation of Carol's guilt over her mother's illness, the child moved towards us and looked at me directly.

(2) The parent's capacity to tolerate interpretations designed to relieve the child's anxiety must be tested. Thus, I felt that interpretation of Carol's feelings produced a negative response in her mother (shown by her comment: "Of course, I've taken her to this doctor and that doctor; they have told me to do different things"). However, this negative response yielded to interpretation.

(3) The behaviour of both mother and child at the end of each interview. This is often particularly suggestive when contrasted with their behaviour at the beginning, and may indicate their capacity to gain relief from the establishment of a deeper communication between them.

(4) The early expression by the parent, as in the case quoted, of an awareness of a distortion in the relationship to the child, and a concern over this; particularly

if this is accompanied by the acknowledgement of love in the relationship (in this case: "She has love . . . deep down"). This seems to be of favourable import.

(5) Similarly, if it is possible to demonstrate to the parent, in front of the child, the latent love implied in behaviour that has been previously interpreted by the parent as purely hostile, anxiety in both of them is lessened, and it is usually possible to continue on this line.

(6) The capacity of parent and child to share the treatment situation is crucial. The history of their previous relationship may give indications of whether or not this is likely to be possible for them, but it may only be demonstrated by trying them out. It will be clear that such therapy may give rise to transference difficulties of various kinds, but these can be minimized. It is important to make it clear, by the choice of interpretation, that the intention is to help both parent and child. Further, points of positive identification between them can be strengthened (as where, in the case quoted, the desire of both Carol and her mother to look nice when they came to the clinic was pointed out).

Needless to say, there is no cause to adhere strictly to this pattern of working, and a case started on this basis can be continued on the lines of separate treatment for parent and child, if events indicate it.

VOL. 2 1961

Such conclusions from clinical experience remain tentative, and the approach to the understanding and treatment of disturbed parent-child relationships is still experimental. Stone (1955) seems to condone uncertainty. Speaking of the research approach into mother-child relationship, he says: "It is not so readily appreciated how distinctive is interactive or diadic behaviour, and how elusive of description".

The treatment of disturbances in parent-child interaction is, not surprisingly, even more difficult than its description and this would seem to justify, in the child psychiatrist, a combination of willingness to experiment and reluctance to dogmatize.

SUMMARY

Psychodynamic insights into parent-child interaction have posed problems for treatment in the child guidance setting, some of which are formulated here.

Treatment in two cases is described. In the first the child was treated by the psychotherapist while her parents were seen by the P.S.W. The value of the conference in tracing parent-child interaction and determining handling is emphasized.

In the second, mother and daughter were seen jointly in the diagnostic interview, which was continued into therapeutic sessions. The value of this technique is discussed and a tentative formulation given of the indications and contra-indications.

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AGE, SEX AND SERVICE PATTERNS IN A CHILD GUIDANCE CLINIC

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VOL. 2 1961

THIS paper is concerned with certain descriptive and evaluative aspects of service to disturbed children in an urban child guidance clinic in relation to the age and sex of the children served. It is intended as a further contribution to the recently accelerating growth of interest and literature in what has come to be termed social psychiatry. Study of demographic and other socio-cultural patterns of psychiatric phenomena and their treatment is increasingly being recognized to have significance that extends well beyond simple description. Hypotheses concerning pathologies, aetiologies and the like are now more often couched in social and cultural terms, as are prescriptive statements about optimal modes for the handling of 'deviant' behaviour (cf. Scott, 1958; Hunt, 1960).

While many of these trends suggest great promise they do require a firmer empirical base. This is especially true with respect to the psychopathology of childhood, an area where social research has been sketchy, sporadic and admittedly difficult. Not the least of these difficulties is associated with sampling problems. It is often (really commonly) difficult to obtain and even to identify effective samples of such children and what samples are obtained are dubiously representative. This comment, of course, also applies to the sample of children studied here.

However, some time ago the author suggested that one efficient way to resolve the problems of temporal, institutional and geographic bias in reseach of this kind would be via the continuous collection of data with different groups in different areas. The results of such investigations, while not replicative in the strictest sense, can, when pooled, "constitute descriptive steps permitting analytic or systematic generalization concerning the sociology and social psychology of mental health and institutional structures in that area" (Roach, Gursslin and Hunt, 1958). Actually, in a very real sense, such an approach provides a potential for more reliable generalization than would be warranted by virtually any single study, limited as it would necessarily be.

Research such as that discussed above, and that to be presented here, can also contribute to the generation of meaningful hypotheses concerning broader aspects of child development in its social and cultural context. An illustration of this will be touched upon at a later point in this paper.

With these varied considerations in mind, we set out in this study to describe the general age and sex distributions, the patterns of service, and relations between the two in one large urban child guidance clinic over a specific interval of time. Results of previous research in different settings and geographic areas indicate

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that both age and sex factors are of relevance in influencing who applies to child guidance clinics for treatment, the pattern of service provided by the clinic, and perhaps the general prevalence and incidence of 'abnormal' phenomena among children and the outcomes of treatment when instituted (cf. Anderson and Dean, 1956; Hollingshead and Redlich, 1958; Roach, Gursslin and Hunt, 1958; Hunt, Gursslin and Roach, 1960).

METHOD

Data for this study were gathered as part of a larger investigation from records of closed cases serviced during 1955–58 at the Community Child Guidance Clinic in Washington University's William Greenleaf Eliot Division of Child Psychiatry.* This clinic is a structurally typical child guidance clinic operating on an open-referral basis with the usual 'team approach'. The Clinic is supported by funds from the United Fund, U.S. Public Health Service and State of Missouri, as well as by the Washington University School of Medicine. Fees are charged according to a sliding scale based upon a family's 'ability to pay'. The fee structure is such that no patient need forgo service on financial grounds alone.

A total of 594 cases were available for study during this time interval, all of which would be classifiable under conventional rubrics of functional emotional disorder. From these, data pertinent to several factors were collected: (a) sex of the child in whose name the family was applying to the clinic; (b) age (nearest birthday) of that child at the time service was instituted; (c) final disposition of the case in the clinic; (d) length of clinic contact in months; (e) the total number of interviews received in the clinic; and (f) for those cases that received a full course of treatment, the outcome in terms of degree of improvement.

Data were available for the first two of these factors from all save one of the cases surveyed. For the remaining factors fewer cases afforded adequate information, though in no case did the *N* fall below 539.

RESULTS AND DISCUSSION

Age and sex

When all data were collected and analysed, it was found that of the total of 593 cases 398 (67 per cent) were male and 195 (33 per cent) female. Census figures for the State of Missouri for the year 1957† indicate a respective approximate 51–49 per cent split. A Chi-square test of the significances of these differences was significant well beyond the 1 per cent level. This heavy over-representation of males in the population of the clinic studied is entirely consistent with the results of previous studies in other settings (cf. Roach *et al.*, 1958; Anderson *et al.*, 1956).

The overall age distribution of clinic patients is given in Table 1, along with corresponding census figures (again 1957 estimates for the State of Missouri). It can

*Thanks are due to Eleanor Kenney, Dolores Ortgier and Eugene Zwillinger for their assistance in the collection and tabulation of the data reported here and to Robert Sullivan who helped with their analysis.

† All census data were drawn from the *Statistical Abstract of the United States* (U.S. Dept. of Commerce, 1958).

readily be seen that at each age-level the representation of cases in the clinic differs significantly from what would be expected in a random selection from the population of Missouri. Both of the extreme age groups are grossly under-represented, while the intermediate age groups are notably over-represented. These results too are consonant with previous reports (cf. Hunt *et al.*, 1960).

TABLE 1. AGE DISTRIBUTION OF CHILDREN IN CLINIC (PERCENTAGES)

Age (in years)	Source		*C.R.*
	Clinic*	Census	
Under 5	6	30	24.0
5 to 9	44	26	9.0
10 to 14	44	22	11.0
15 to 19	6	22	16.0

*N=593.

VOL. 2 1961

TABLE 2. AGE-SPECIFIC RATIOS OF MALES TO FEMALES IN CLINIC

Age (in years)	Source		*C.R.*
	Clinic*	Census	
Under 5	1.57	1·04	17·67
5 to 9	1·87	1·04	27·67
10 to 14	2·35	1·04	43·33
15 to 19	1·92	1·01	30·33

*N=593.

In Table 2 are reported age-specific rates of the relative representation of males and females in the clinic, as compared with comparable rates in the white American population of the United States at the time of the 1950 census. The white population was selected as perhaps affording a more appropriate comparison because of the very small percentage of non-whites in the clinic group. The differences between the clinic and census figures in Table 2 all are significant beyond the 1 per cent level.

Several things can be seen from this Table. Firstly, it is evident that at each age-level the ratio of males to females in the clinic is considerably greater than would be expected from the representation of the sexes in the general population. Secondly, it can be noted that there is a general trend for the relative representation of males to increase with age in the clinic, while remaining approximately constant in the population. In other words, the over-representation of males in the clinic, tends to increase directly with age within the age-range studied.

The exact interpretation of these results is by no means obvious. Several alternative hypotheses are equally plausible. For one thing, these data may reflect a greater prevalence and/or incidence of psychopathology among male children as compared with female—a prevalence rate that increases more rapidly for males than for females. The same general possibility exists for the age distribution obtained—the prospect of a greater prevalence of pathology among children intermediate in age with respect to the range dealt with here. Perhaps some sort of complex of factors such as those suggested by Arnold Green (1949) may be operating to constrain the production of more frequent emotional disturbance among males and with the age-range from five to fourteen representing a critical period for its development.

However, neither of these hypotheses is fully satisfying, at least for the writer. Consider, for example, the frequency with which the general adolescent period appears to be a time of onset for many forms of adult psychopathology. Perhaps, then, a more likely explanation for the results reported above may reside in differential parental behavioural standards as applied to boys and girls and at different ages.

It may be that because of general cultural status and role prescriptions deviant behaviour among males encounters a narrower range of parental tolerance, thus increasing the likelihood of parents seeking professional assistance in dealing with it. After all the culture is still formally patriarchal, so that the male child is necessarily being prepared for the ultimate assumption of a more dominant and responsible status position with its attendant role specifications. It is also possible that parents feel a greater sense of responsibility in the rearing of male children (especially in view of the ultimate spectre of delinquency) and so are more prone to seek outside help for 'problems', and to be less prone to let 'nature take its course'.

The data reported reflecting age-patterns may quite possibly reflect similar phenomena. For one thing it is highly likely that time is required for the 'press' of deviant behaviour in the child to force a decision from the parents that he is probably not going to 'outgrow' it, and therefore to seek professional help. It probably also requires a substantial measure of time in all but the severest pathologies for parents to exhaust their 'medicine chest of home remedies' and decide to seek outside aid.

Then too the number of children in the clinic increases concomitantly with the age at which most begin school. Obviously, the wider the range of behaviour and contacts a child exhibits and encounters, the greater will be the possibility of his exhibiting deviant behaviour and of having it noticed. Parents no doubt adapt to their children's idiosyncrasies in some degree, and may therefore require the pressure of some external agent before seeking professional consultation.

Without doubt other explanations may occur to the reader, which is all to the good. However, which of the alternatives, if any, are correct will only be known after a great deal more research.

Case disposition

The general distribution of case dispositions in the clinic is given in Table 3. As can be seen from this table, about 25 per cent of the total number of cases applying for service at the clinic entered into psychotherapeutic treatment, and only about 7 per cent of the total received and/or remained for a full course of such treatment.

Whether this latter notably low figure is representative of more general trends is, of course, not known, but it obviously warrants further investigation. To the extent that only 7 per cent of the totality of applicants to a clinic receive full-range treatment, one may well doubt the efficacy of psychotherapy as a solution to the broader social problem presented by the psychopathology of childhood.

TABLE 3. GENERAL DISTRIBUTION OF CASE DISPOSITIONS IN THE CLINIC

Disposition	Percent of total cases*
Family quit during intake period	24
Cases referred by clinic after intake	39
Family refused treatment offered by clinic	11
Entered treatment; quit against medical advice	19
Received full treatment	7
Total	100

*N=539.

VOL. 2 1961

In any event, when patterns of case disposition were analysed as a function of either or both sex and age no significant differences were observed. It would seem, therefore, at least for the clinic in question, that neither the sex nor the age of the child has an influence upon the kinds of dispositions made by the clinic.

Duration of clinic contact

Comparisons of the duration of treatment, in terms both of the number of interviews received and of months of contact, are given for sex and age in Figs. 1 and 2 respectively. These figures also chart the patterning of duration of service in the clinic without regard to these factors.

While Fig. 1 suggests a tendency for females to receive fewer interviews and to be seen over a shorter time span, a median test of these differences was not significant. By the same token, no overall age differences were revealed by the data in Fig. 2, except for the tendency of the oldest group to receive fewer interviews and to be seen for shorter periods of time.

In the clinic as a whole the median total number of interviews received was three, reflecting the trend indicated by Figs. 1 and 2 for the majority of clinic applicants to receive fewer than five interviews. On the other hand, the overall mean total number of interviews received was 24, suggesting the obvious fact that some applicants received a very large number of interviews. Finally, the median span of clinic contact was about four and one-half months.

Turning to a consideration of only those cases taken into treatment, it was found that the mean number of interviews received by this group as a whole was 40. For the group (N=101) that received partial treatment, but terminated 'against medical advice', the mean number of interviews received was 29, only slightly more than the overall clinic mean. On the other hand, a mean of 52 interviews were

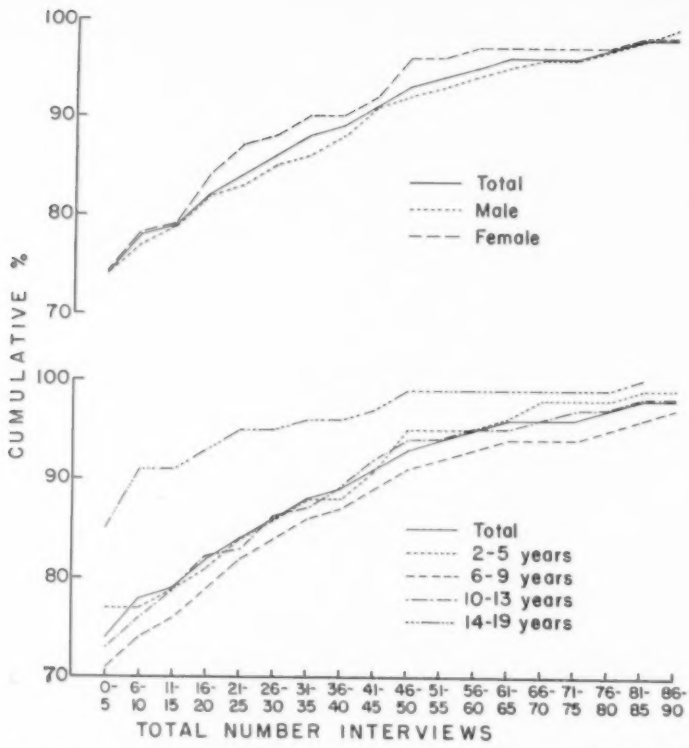

FIG. 1. Cumulative percentages of cases receiving varying total numbers of interviews.

received by those cases (N=85) continuing in the clinic for the full course of treatment.

An obvious focus for future research in this area would seem to centre about the independent variables that underlay these notable overall variations in patterns of service. Only a very small start has been made in that direction, although a number of provocative points of departure exist (cf. Davis, 1938; Gursslin *et al.*, 1960; Hunt, 1960).

Treatment outcomes

Reference to Table 4 shows that, of the 85 cases that received the full course of psychotherapeutic treatment, 36 were rated by their therapists as exhibiting either minimal or no improvement, while 49 were rated as showing definite improvement. With respect then only to such cases, the improvement rate indicated by these figures would be of the order of 57 per cent. However, if all cases that entered treatment at all are considered, this rate drops to about 26 per cent. The significance of these data, of course, is entirely indeterminate. They do, however, point up a very pressing empirical need; that is, a need for intensive study of such items as the rate of

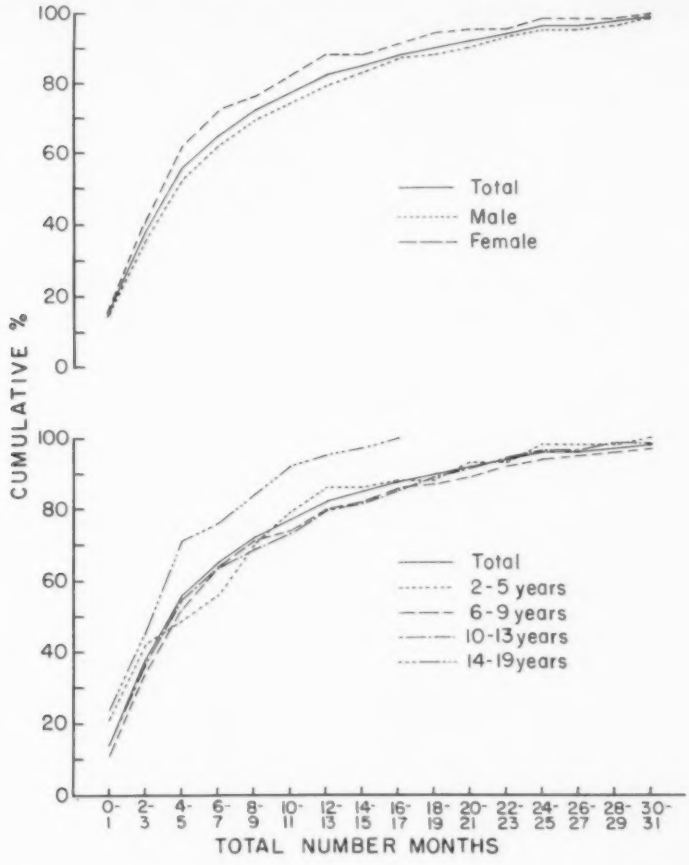

FIG. 2. Cumulative percentages of cases seen in the clinic for varying numbers of months.

'spontaneous recovery' in childhood psychopathological conditions, so as to provide a sound base for the critical evaluation of various treatment methods.

TABLE 4. IMPROVEMENT FOLLOWING TREATMENT AS A FUNCTION OF SEX*

Improvement rating	Sex		
	Male	Female	Total
None or minimal	28	8	36
Definite improvement	28	21	49
Total	56	29	85

* $\chi^2 = 3{\cdot}44$, $df = 1$, $0{\cdot}10 > P > 0{\cdot}05$.

Table 4 also reports frequencies of improvement as a function of sex in those cases receiving full treatment. A Chi-square test of the differences in this table falls just short of reaching the 5 per cent level of significance. It would seem, therefore, that there is a trend for the likelihood of improvement following a full course of psychotherapeutic treatment to be greater for females than for males. In the light of our earlier comments, it would be of great interest to know whether or not such differential rates of improvement are a result of the application of less rigorous standards in the case of females or whether they reflect milder pathologies or even greater amenability to psychotherapy on the part of girls.

Lastly, an analysis comparable to that reported in Table 4 was conducted for the age variable. No significant tendencies were revealed for improvement following treatment to vary as a function of age.

SUMMARY

This study entailed an examination of closed case records of emotionally disturbed children served in a large urban child guidance clinic. An analysis was made of patterns of service in relation to the age and sex of these children. It was found that sex tended to bear a significant relationship to many of the factors studied, while age seemed to be essentially unrelated to them. A variety of interpretive speculations were offered along with suggestions for further research.

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A STUDY OF THE LANGUAGE OF AN AUTISTIC CHILD

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VOL. 2 1961

THE AIM OF THE EXPERIMENT

THE aim of the experiment was to study the spoken language of a child diagnosed as 'autistic'. We wished to compare the development of his language with the development of language in normal children. We wanted to find out whether there were any distinctive features in the language of this child which were not shown by normal children, even by those of younger age-groups.

In this study we have made use of the results obtained by McCarthy (1930) and Sampson (1956) in their studies of language in normal children. We are very grateful for their help, and particularly for the kindness of Miss Sampson in allowing us to extract data from her original records.

Infantile autism

The syndrome of "early infantile autism" was first described by Kanner (1943). Originally he used this term to apply to children who show "an inability to relate themselves to people and to situations from the beginning of life". He later modified his description of the syndrome to include children who were reported to have developed normally for the first 18–20 months of life, only to undergo at this point a severe withdrawal of affect, manifested by the loss of language function, failure to progress socially, and the gradual giving up of interest in normal activities.

Kanner (1956) gave as the most important criteria for infantile autism:

(1) "An extreme self-isolation, or an inability to relate themselves in the ordinary way to people or situations from early in life."

(2) "An obsessive insistence on the maintenance of sameness."

He also referred to signs of good cognitive potential in autistic children, and stated that in mute children this was concluded from their facility with performance tests.

Disorders of language in autistic children

Kanner (1948, 1956) described the following characteristics of language in autistic children. There may be no speech at all. In those who do speak, there is often a failure to use language to convey meaning to others. There is a tendency to repeat the same phrases, rather than to construct original remarks. Immediate echolalia may be present, or delayed echolalia. Affirmation is indicated by the repetition of a question. It takes many years before such a child can use the word 'yes'. Reversal of pronouns occurs. Kanner's explanation of this phenomenon is worth quoting: "The absence of spontaneous sentence formation and the echolalia type of reproduction give rise to a peculiar grammatical phenomenon. Personal pronouns are repeated just as heard, with no change to suit the altered situation.

The child, once told by his mother: 'Now I will give you your milk', expresses the desire for milk in exactly the same words. Consequently he comes to speak of himself always as 'you', and of the person addressed as 'I'."

The subject

Jimmy was born on 20th February, 1953. He was admitted to the Children's Residential Unit on 23rd February, 1958, at the age of 5 years. His family at that time consisted of mother, father, a girl of 3 years and a boy of 18 months. The family lived together and appeared harmonious. Jimmy had suffered only brief separations from his mother. One of these was at the age of 2, when the mother went into a nursing home to have her second child. On her return Jimmy was said to have confused his mother with the woman who was looking after him. The mother was an intelligent woman. She appeared warm-hearted and concerned about Jimmy. The father was a busy professional man who, though fond of his children, was not able to give much time to them.

The mother described the child's early development as normal up to about 2 years, though he cried a great deal, and showed considerable irregularity in his bowel motions. He sat up at 6 months, and walked at 14 months. By 2 years he was clean and dry by day. The mother also stated that up to the age of about 2 years he was responsive and friendly. He started to speak at about 1 year, and continued to acquire and retain new words up to the age of about 2 years. From this time onwards, although he acquired some new words, he began to lose many of the words he had already learnt. By 3 years he had stopped speaking. He also developed at this time habits of smearing faeces, spitting and rocking. He would wave his hand or some object in front of his eyes, apparently enjoying the sensation of repeated stimulation by the light. He apparently no longer wanted affection. He would avoid looking at people. Although he could hear and understand what was said to him, he often did not respond in any way. Feeding difficulties also appeared at 2 years. There was no evidence of any physical illness at this time, such as might account for the arrest in his development.

He was admitted to the Children's Residential Unit when 5 years old. He was then not speaking at all. He was still showing most of the symptoms mentioned above. He would lie for long periods on the couch, sucking his thumb, and would resist being moved. He did not like to be taken out into the grounds. He did a great deal of spitting and smearing of his saliva. He was assigned to a female therapist, who saw him three to four times a week. Her treatment consisted in taking him back to babyhood, first giving him the bottle, and then progressing to messy play with clay or water. Probably as a result of the treatment he received, he gradually became less withdrawn. His first recorded word was after three months in the Unit. After seven months he could say quite a number of single words. After ten months he said words such as 'baby', 'Mamma', 'dirty', 'what a to-do'. From then on he gathered words fairly rapidly and started putting them together in short phrases or sentences. When the experiment began, after he had been 21 months in the Unit, his language was at about a 2-year level. He was still receiving regular treatment during the period in which our observations were made.

At the age of 7 the child was certainly very retarded in many ways. Even in those

things which he could do best, namely performance tests, he was considerably behind his age. However, the following considerations suggested that he was not an ordinary defective child.

He had progressed normally up to the age of 2, after which there had been an arrest in his development and, in the case of speech, a regression with no apparent physical cause. He also showed, on admission, the following symptoms:

(1) An inability to relate in the ordinary way to people. He took no notice of adults when they came into the room. He would avoid looking at an adult who approached him.

(2) He showed a desire for the preservation of sameness. For example, he persisted in repetitive activities, such as rocking, or manipulating shiny objects, and resented any interference with these activities. He also showed great reluctance to leave the house to play in the garden.

(3) He showed a preoccupation with certain sensory characteristics of objects without regard to their accepted functions. For example, he would become preoccupied with the reflection of light on a shiny object. He would wave a toy car in front of his eyes, being interested in the interruption of the light. He did not run the toy car along the floor as a normal child would do.

VOL. 2 1961

(4) He showed an ability for skilled manipulation of objects which was considerably in advance of his level of development in other respects. When given the performance tests of the Merrill-Palmer Scale, he scored at at a level of 4 years 9 months. But at this time his language was at about a 2-year level, and his emotional and social behaviour also resembled that of a 2-year old.

In view of the presence of Kanner's two main criteria of self-isolation and insistence on sameness and in the light of the child's developmental history we felt justified in describing our subject as a case of infantile autism.

THE EXPERIMENT

Method of observation

In this study of an autistic child's language we made use of a method which was modelled on that used by McCarthy (1930) in her study of the language of normal children.

McCarthy studied samples of children at each age level from 18 months up to 4½ years (i.e. at 18 months, 24 months, 30 months and so on). She used an individual play session of an adult with the child, with standard play materials, during which all remarks were recorded. Sampson (1956), working in England, used a similar situation, studying the same group of 50 children at 18 months, 24 months and 30 months.

In our study the child was seen by an adult for a series of twelve interviews, each lasting 15 min, during which he was encouraged to play with a standard set of play materials. These included picture-books, drawing materials, small dolls, cups and saucers, and so on. The adult spoke to the child in a natural way, and was ready to enter into play with the child. Thus the situation used was very like that used by McCarthy or Sampson. Everything that was said was recorded on tape and also written down. We had three sets of four interviews. These sets were spaced at approximately 3-monthly intervals. We hoped to be able to observe any change that c

took place over the 3-monthly periods separating the groups of interviews. The whole experiment lasted a little more than six months.

The classification of remarks

McCarthy classified the children's remarks according to comprehensibility, length, grammatical structure and function. She classified the words used according to parts of speech.

Her classification of the function of remarks was derived from Piaget, who attached importance to what he called "egocentric speech". By this he meant remarks uttered just for the pleasure of talking without regard to whether the hearer understands or responds. Three types of egocentric speech were distinguished by Piaget:

(1) Repetition, or echolalia.

(2) Monologue, i.e. the child talks to himself as though he were thinking aloud without addressing anyone.

(3) Dual or collective monologue, i.e. an outsider is associated with the action or thought of the moment, but is expected neither to hear nor to understand. His presence serves only as a stimulus.

In order that we could compare our results with McCarthy's we classified all our remarks according to her classification. However, in the case of the egocentric category of function, we found it necessary to modify the subdivisions in order to produce a rigid scheme for marking responses. "Repetition" was divided into two sections:

(1) Repetition of what the adult has just said, i.e. echolalia.

(2) Repetition of what the child has just said. This was only scored when the repetition was purposeless. For example, the repetition of a request, or a remark repeated because the experimenter had not understood it, was not scored as a repetition under this section.

The distinction between 'monologue' and 'dual or collective monologue' seemed very difficult to make. It seemed impossible to judge whether in any particular instance the presence of the experimenter acted as a stimulus. Monologue in general, whether 'collective' or not, was divided as follows:

(1) Inappropriate and purposeless remarks, i.e. remarks which seemed to have no function at all in communication.

(2) Remarks in which the child seemed to be thinking aloud without addressing anyone.

(3) Action accompaniments, that is, remarks which accompany an action of the child's and simply say what he is doing. For example, the child says "sit down" as he sits down. These remarks, being simultaneous with the actions, cannot be regarded as expressions of intention, and have no function as communication.

(4) Play accompaniments: these are remarks which form part of a running commentary on the child's play, and do not appear to require any understanding or response by the experimenter. For example, the child, giving the mother doll a piece of plasticine cake, says: "Mummy a piece of cake".

These classes together appeared to us to cover adequately all cases of remarks which were egocentric in the sense used by Piaget and McCarthy.

VOL. 2 1961

RESULTS

1. *The Approximate Level of our Subject's Language*

In order to decide the approximate level of our subject's language we used two criteria, (1) average length of sentence, and (2) variety of words used. These are both characteristics which increase steadily with age in children. We found that in both these characteristics our subject fell between the 24 months and 30 months level when compared with McCarthy's children. (Table 1.) In comparing him with Sampson's children we found that our subject's average length of sentence was 2·4 words, as compared with 2·17 words for her group of 30-month old boys. In variety of words used our subject used an average of 34·4 different words in 50 responses, as compared with 46·5 words for her 30-month group. Thus, he was slightly superior to Sampson's 30-month group in mean length of sentence, but inferior in variety of words used. We chose McCarthy's 24-month, 30-month and 36-month groups for comparison with our subject. When using Sampson's results we compared our subject with the 30-month group.

TABLE 1.

	McCarthy			Autistic child			
	24 mths	30 mths	36 mths	1st four inter-views	2nd four inter-views	3rd four inter-views	All 12 inter-views
Length of sentence*	1·8	3·1	3·4	1·9	2·5	3·0	2·4
Variety of words used†	29·1	51·0	62·8	25·8	34·0	43·5	34·4
Percentage of incomplete sentences‡	25·1	18·1	16·2	39·1	33·6	46·1	40·0
Percentage of incomprehen-sible responses	33·0	11·0	7·0	6·5	8·8	9·1	8·4

*Mean no. of words per response (comprehensible responses only).
†Mean no. of different words used in first 50 responses of each interview.
‡Comprehensible sentences only

2. *Results of the Comparison of our Subject with Groups of Normal Children at Younger Age-levels*

Length of sentence.

We found that our subject advanced considerably in mean length of sentence over the six months period. In fact he advanced from a mean length of 1·9 words to a mean length of 3·0 words, i.e., from a 24-month level to a 30-month level according to McCarthy's norms. (Table 1.) He also came to use rather more complex sentences. He advanced from such sentences as "Rub it out", or "Make a bus", to "Man's bumped his head on a jeep".

Variety of words used

He also came to use a larger variety of words over the period of the experiment. (Table 1.)

Incompleteness of sentences

In spite of the advance in length and complexity of sentences, and variety of words used, the number of incomplete sentences which he used did not decrease over the period. In fact it increased. (Table 1.) This fact is contrary to the development of language in the normal child, in which, as the length and complexity of his sentences advance, the number of incomplete sentences used diminishes. In addition to this, our subject used far more incomplete sentences at any stage even than McCarthy's 24-month old group. Although Jimmy came to be able to convey more complex ideas, the expression of them remained very incomplete. For example, he would say "Want draw car", when he meant "I want you to draw a car", or "Going to get cup tea", when he meant "I am going to get a cup of tea", or "People waiting get in jeep", when he meant "The people are waiting to get into the jeep".

Comprehensibility

Our subject's language was often very poor in its articulation, but could usually be understood. The proportion of incomprehensible responses was slightly lower than McCarthy's 30-month group and higher than her 36-month group. (Table 1.)

Function

Egocentric responses. Jimmy made far more egocentric responses than McCarthy's subjects, even when compared with those of 24 months. Twenty-eight per cent of his remarks were egocentric, compared with 6·5 per cent of those of McCarthy's 24-month old children. (Table 2.) A large proportion of Jimmy's egocentric remarks consisted of repetitions of himself or of the experimenter. 12·1 per cent of all his remarks were repetitions of himself, and 6·4 per cent were repetitions of the experimenter. The following example illustrates both types of repetition:

Subject: "Man's bumped his head on jeep" (pressing the doll's head against the windscreen).
Subject: "Bumped his head on jeep."
Experimenter: "Oh, how did he do that?"
Subject: "How'd he do dat."
Subject: "Man, how'd he do dat."
Experimenter: "What happened?"
Subject: "—at happened."
Subject: "Man's ——."
Subject: "Man's falling."
Subject: "Man's bumped his head on jeep."
Subject: "Bumped his head on jeep."
Experimenter: "Silly old man."
Subject: "Silly old man."

The next most frequent type of egocentric remark used by our subject was the action accompaniment, accounting for 4·6 per cent.

Irrelevant and purposeless remarks were less frequent (2·2 per cent), but were of interest, since they often seemed to consist of stored phrases, which he had heard an adult say at some time or other, and which he brought out without any apparent

function or relevance to the context. For example, he would say "I'll buy it in town", a sentence he had heard a nurse use to pacify him, but which he brought out without out without any idea of its expressing an intention of his own.

Socialized responses. Jimmy made considerably fewer remarks giving information than McCarthy's groups. He gave considerably fewer answers. He asked far fewer questions (Table 2); in fact he only asked two doubtful questions during the whole experiment, and these were not addressed to the experimenter. They consisted in

TABLE 2. PERCENTAGES IN VARIOUS CATEGORIES OF FUNCTION*

	McCarthy			Autistic child			
	24 mths	30 mths	36 mths	1st four inter-views	2nd four inter-views	3rd four inter-views	All 12 inter-views
Egocentric responses	6·5	4·0	3·6	35·0	31·0	21·8	28·3
Emotionally toned responses	18·3	14·2	9·4	24·6	23·4	35·1	27·9
Responses giving information	40·8	57·7	50·9	29·7	31·0	28·5	29·7
Questions	13·9	3·5	13·2	0·0	0·3	0·0	0·1
Answers	16·6	14·6	19·1	7·4	6·6	8·6	7·6

*Comprehensible responses only.

TABLE 3. PERCENTAGE OF EACH PART OF SPEECH OF TOTAL WORDS USED

	McCarthy's sample 30 mths children	Sampson's sample 30 mths children	Autistic child. All 12 interviews
Nouns	25·8	28·3	36·4
Verbs	23·4	22·2	25·5
Adjectives	—	7·1	8·3
Articles	—	6·6	6·7
Adjectives + articles	14·3	13·7	15·0
Personal pronouns	—	4·2	0·9
Other pronouns	—	14·3	4·0
All pronouns	19·0	18·6	4·9
Adverbs	6·7	9·4	10·2
Prepositions	4·6	3·7	5·8
Conjunctions	1·7	0·8	0·1
Interjections	2·8	1·5	1·4
Miscellaneous	1·8	1·9	0·6

saying "Want a cup of tea" to the dolls. Thus, he used many fewer of those types of remark which are concerned with communication in the sense of interchange of information. Jimmy gave more emotionally toned responses, chiefly demands and requests, than McCarthy's groups. But this may well have been due to his greater familiarity with the examiner. One would expect a normal child to make more demands when he gets to know an adult.

VOL. 2 1961

Parts of speech

Our subject used considerably more *nouns* than either McCarthy's or Sampson's 30-month old children (Table 3). This should be considered in the light of McCarthy's finding that children of 18 and 24 months use a high proportion of nouns, but that after this the frequency of nouns declines sharply and soon settles down to the more or less constant proportion in which nouns are used in our language. Jimmy also used far fewer pronouns of any sort. He used words such as 'that' and 'it' very seldom. He never used the word 'what?' (unlike the normal young child who frequently asks, "what's that?"). His tendency was to repeat the noun instead of using the word 'it'. Thus he said:

"Wheel's coming off."
"Wheel's coming off."
"On again."
"Wheel back."

instead of saying:

"The wheel's coming off."
"It's coming off."
"It's on again."
"It's back."

Personal pronouns. Jimmy used considerably fewer personal pronouns than Sampson's 30-month old group (Table 3). He usually referred to himself and the experimenter by their proper names, 'Jimmy' and 'Burty', instead of by 'I' and 'you'. But on very rare occasions he apparently used 'I', 'you' and 'him' correctly. We did not find any clear instances of his using 'I' when he meant 'you', or vice versa. But his tendency to repeat sentences he had heard adults use in the past, without clear realization of their function, led to apparent misuse of personal pronouns; e.g. when a box which he wanted was missing, he kept saying, "Buy you one in town" (presumably a repetition of what a nurse had said to him in the past when he had complained of the loss of something).

In the frequency of the other parts of speech, namely, verbs, adjectives, articles, adverbs, prepositions and conjunctions, Jimmy did not differ markedly from the normal children.

Repetition.

We have already mentioned the great amount of repetition of himself and the experimenter which occurred in our subject's records. We compared his results with those for Sampson's children of 30 months, and found that our subject showed considerably more immediate repetition of self. (Table 4.)

Another form of repetition is the use of the same word repeatedly in the course of an interview. We can find how often words are repeated during an interview by taking the number of different words used as a percentage of the total words used. We found our subject repeated the same words considerably more than Sampson's group (Table 5). If we confined our attention to nouns only, the difference was still more striking. Our subject used the same nouns repeatedly far more than Sampson's normal subjects. The normal child tends to repeat structurally necessary words, such as 'is', and 'a', 'the'. But our autistic child repeated nouns, that is to say, he would go on and on about the same things.

DISCUSSION

The following comments made in the literature about the speech of autistic children appear to be confirmed in this particular case:

(1) That speech is used to a lesser extent for communication.

(2) That there is a tendency to repeat the same phrases rather than to construct original remarks.

(3) That echolalia is present.

(4) The suggestion that the autistic child confuses 'I' and 'you', or fails to use personal pronouns, was not entirely confirmed, though it is true that our subject usually referred to himself and the experimenter by proper names.

The relative disuse of personal pronouns seemed to be only an instance of a very much diminished use of any pronouns at all, and the use of nouns instead.

TABLE 4. PERCENTAGE OF IMMEDIATE REPETITIONS OF SELF

Sampson (average per cent) 30 mths group	Autistic child
6·4	14·2 (higher than 92 per cent of Sampson's group)

TABLE 5. NUMBER OF DIFFERENT WORDS AS A PERCENTAGE OF TOTAL WORDS USED

	Sampson (30 mths group)	Autistic child
All words	51 per cent	35 per cent (less than any child in Sampson's group)
Nouns only	66 per cent	34 per cent (less than any child in Sampson's group)

In the general picture of childhood psychosis it has been pointed out that the child may show a surprising degree of maturity in some ways (e.g. on performance tests of intelligence) against a background of retardation. It may be suggested that even if we consider an autistic child's language alone, he shows a similar unevenness of maturity. As his language advances in some ways (e.g. in length of sentence and complexity of ideas expressed), in other ways (for example, incompleteness of sentences and frequency of nouns) it remains immature.

In this experiment we have developed a method which, here applied to only one autistic child, might well be applied to others, until a group has been collected.

It would also be of great interest to apply this method to defective children who are at a similar level of language development, and then to compare their language with that of autistic children.

SUMMARY

The retarded language of an autistic child of 7 years was recorded and compared with the languge of normal children from 24 to 30 months. The child showed progress over a 6 month period in length of sentence and variety of words used, but

VOL. 2 1961

his sentences remained very incomplete. He used language much less than the normals for conveying or asking for information and much more to repeat the adult's remarks or his own. His language was monotonous in its content. He used more nouns and far fewer pronouns than the normals. He used fewer personal pronouns, but seemed able to use personal pronouns correctly on rare occasions.

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THE SELF-REPORTED PERSONAL AND SOCIAL ADJUSTMENT OF BRIGHT HIGH-ACHIEVING AND UNDER-ACHIEVING HIGH SCHOOL BOYS*

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VOL. 2 1961

THE present article compares self-reports regarding the personal and social adjustment of a group of bright high school boys making good grades in school with that of an equated group making mediocre or poor grades.

In many previous studies, conducted at various educational levels, school achievement has been found to be associated only slightly or not at all with general emotional adjustment and maturity, whether self-reported or measured more objectively (see for example the reviews by Stagner, 1933; Wolf, 1938; Harris, 1940; and Garrett, 1949). Such studies have, however, often failed to control such relevant variables as socio-economic status, intelligence, or in some instances sex. Walsh (1956), however, studying two carefully matched groups of elementary pupils with a doll-play procedure and teacher comments, found distinctly more signs of inhibition, insecurity, and defensiveness in the under-achieving group.

Gough's (1955) results suggest that academic under-achievement, while not associated with general emotional maladjustment, does tend to represent "a (mild) form of asocial behaviour" analogous to that of "the troublemaker, the disciplinary problem, the delinquent, and the adult criminal". That such 'asocialization' may in part be anchored in 'asocial' peer-clique membership is suggested by Conklin's (1940) finding, based on systematically analysed case-study material, that bright under-achievers in elementary school tend more often than high-achievers to have a history of 'unwholesome' companions.

The present study differs from most previous studies in that the groups compared were more carefully equated, and the sample was more homogeneous in intelligence (all subjects being of superior intelligence). In addition, following up Conklin's lead, systematic data were obtained on peer-clique norms, an area largely omitted from previous studies.

SAMPLE

The sample, drawn from eight high schools, included two equated groups of boys of superior intelligence (120 I.Q. or above), making good or poor grades in school, respectively. Each group contained 49 boys, except where otherwise noted below. (In each instance the groups were equated, and the *N* for each group was identical.) The two groups were equated for three variables on which information was easily obtainable and which it was thought might be related to adjustment:

*The research reported here was part of a larger study of bright high- and under-achieving high school boys, sponsored by the Gifted Child Project of the Portland (Oregon) Public Schools and supported by a grant from the Fund for the Advancement of Education.

grade in school, socio-economic status, and intelligence. In each group there were 20 freshmen, 14 sophomores, and 15 juniors. In each group the number in each socio-economic class were: 1 upper, 16 upper-middle, 23 lower-middle, and 9 lower class. The high-achievers had a mean I.Q. of 126·3; the under-achievers, 125·3 — the difference being non-significant.

The groups differed in their grade-point averages in academic courses (with a minimum of three academic courses for each student). The high-achievers had an average of 1·00–1·67 (1 being the best grade possible, 5 the poorest), with a median of 1·2. The under-achievers had an average of 2·75–5·00 (2·75 being regarded as under-achievement for students of superior intelligence), with a median of 3·4.

Girls were originally included in the sample, but too few under-achieving girls were found to make possible group comparisons. This finding is consistent with previous findings that in contemporary America, below the college level, boys tend to make poorer grades than do girls of equal intelligence (Harris, 1940; Gowan, 1944), though not necessarily poorer scores on achievement tests (Stroud, 1942).

PROCEDURE

Information was obtained from the subjects, assembled at school in groups of 10–30, through self-administered individual questionnaires. The students were told that they were taking part in a survey of student opinions, interests and activities, etc. They did not sign their names, but birthdates and other data were used to identify questionnaires for the purpose of selecting the sample. Otherwise anonymity has been maintained.

The significance of group differences was evaluated by (two-tailed) Chi-square and median tests (Siegel, 1956, pp. 111–116).

Data were obtained on two broad topics, each including the subtopics indicated: (A) general personal adjustment, including (1) personal morale, (2) emotional stability and maturity, and (3) vitality and self-reliance; and (B) relations with peers, including (4) peer adjustment and (5) peer-clique norms. Several types of procedure were used to obtain measures of these variables. They are listed below, and their general nature is briefly described. Then the specific measures of each variable are summarized by topics.

(1) A Personality Inventory* (PI) which included a number of six-item scales (with agree-disagree response categories), with items intermingled.

(2) The Mooney Problems Checklist (MPC) (Mooney, 1950), administered routinely (but actually with many exceptions) to tenth graders in the Portland public high schools prior to the academic year 1956-1957. (N for this procedure was 25 in each group.) The MPC deals with a number of problem-areas, with 30 'problems' listed in each area. A student's score for a given area was the number of problems he checked in that area.

(3) A 100-item Self-Description Adjective Checklist (SDAC), with items classified (by the consensus of at least 8 of 12 independent judges) in six categories (plus a miscellaneous category). A student's score for a given category was the number of

*Adapted from a questionnaire developed by Guilford and his associates (1953, 1954). We are grateful to Dr. Guilford for making this questionnaire available to us.

'positive' items minus the number of 'negative' items he checked as describing himself.

(4) A 53-item Clique Description Adjective Checklist* (CDAC), with items classified (by the consensus of at least 8 of 12 independent judges) in six categories (plus a miscellaneous category). (N was 65 in each group for this instrument.) A student's score for a given category was the number of 'positive' items minus the number of 'negative' items he checked as describing 'most' of the boys he "pal-ed around with regularly".

(5) Single questions on specific issues.

Personal morale

Measures of personal morale included: (a) A PI scale designed to measure Personal Morale (corrected odd-even reliability for the present sample, 0·66). (N for this measure was 65 in each group.) Sample item: "Things are going well with me". (b) A 7-item SDAC category titled Satisfaction with Life. Sample items: bitter (scored minus), happy (scored plus). (c) Self-rating of the student's "satisfaction with life in general", using a six-point scale ranging from "very satisfied" to "very dissatisfied".

VOL. 2 1961

Emotional stability and maturity

Measures of this variable included: (a) Three PI scales† designed to measure, respectively, Cynicism (reliability, 0·61), Impulsiveness (reliability, 0·63), and Deviant Adventurism (reliability, 0·79). (N for each of these scales was 65 in each group.) Typical items were: "Most people will take advantage of you if they can get something out of it" (Cynicism). "I act on impulse more often than not" (Impulsiveness). "I like to take chances more than most people" (Deviant Adventurism). (b) The MPC scale titled Personal Psychological Relations. (c) A 21-item SDAC category titled Emotional Stability and Maturity. Examples of positive items: mature, responsible, stable; negative items: high-strung, rebellious, worrying.

Vitality and self-reliance

Measures included: (a) Four PI scales designed to measure Self-Confidence (reliability, 0·66), Self-Assertion and Initiative (reliability, 0·69), Self-Reliance (reliability, 0·33), and Excessive Need for Approval (reliability, 0·35), respectively. A typical item was: "I am troubled with feelings of inferiority" (Self-Confidence, negative item). (b) The MPC scale titled Health and Physical Development. (c) A 4-item SDAC category titled Vigour. The items were: active, alert, enthusiastic, and forceful.

Peer adjustment

Measures included: (a) The MPC scale titled Social Psychological Relations. (b) A 14-item SDAC category titled Social Solidarity Orientation or Cooperativeness. Examples of positive items: considerate, friendly, tolerant; negative items:

*Mr. J. Robert Wallace collaborated with Morrow in preparing the Clique Description Adjective Checklist, which represents an elaboration of a technique used by Conklin (1940).

†Mr. J. Robert Wallace collaborated with Morrow in preparing the scales indicated.

argumentative, stubborn, tactless. (c) Single questions asking the student how many boys he pal-ed around with regularly in a group or how many close friends he had, how well he got along with other boys (four-point scale), and how satisfied he was with his relationships with boys (six-point scale); also whether he had had any dates in the past month, how well he got along with girls (four-point scale), and how satisfied he was with his relationships with girls (six-point scale).

Peer-clique norms

The CDAC was used to obtain indirect information on the norms of behaviour emphasized by the friendship peer-group in which each student was anchored. The categories in which scores were obtained were: (a) School-Achievement Orientation (positive or negative) (7 items). Examples: "study hard", "dislike school". (b) General Attitude toward Authority (positive or negative) (5 items). Examples: "show respect for authority", "rebellious". (c) Overt Violation of Laws or Adult Standards (8 items). Examples: "drink heavily sometimes", "law abiding". (d) Excitement-Seeking (3 items): "adventurous", "always looking for excitement", "daredevils". (e) Socially Approved, Non-Academic Interests and Activities (5 items). Examples: "go on dates together", "like sports", "go to church". (f) Satisfaction (3 items): "cheerful", "dissatisfied", "restless". There were 22 miscellaneous items.

RESULTS AND DISCUSSION

The results are summarized in Table 1 and in the ensuing paragraphs.

Personal morale

The two groups did not differ significantly on any of the measures of personal morale. On each measure most boys reported moderate to high positive morale or satisfaction with life.

Emotional stability and maturity

All but one of the four measures of emotional stability and maturity differentiated in the expected direction. The under-achieving group described themselves as more impulsive and adventurous, which is not inconsistent with Gough's (1955) conception of academic under-achievement as a form of "asocial behaviour". But our finding that under-achievers describe themselves as having less general emotional stability and maturity seems to contradict his. However, examination of the single-item results (on the SDAC) reveals that the two groups did not differ on such items as nervous, high-strung, moody, over-sensitive, or immature—i.e. items referring to tension or to general maturity. Only four items (out of 21) differentiated singly (each at $P<0{\cdot}02$): stable, responsible, restless, and spendthrift. It is of interest to consider these in connection with semantically related 'miscellaneous' self-description items which were highly differentiating in the expected direction (each at $P<0{\cdot}001$): dependable, daring, and mischievous.

This total pattern seems consistent with Gough's formulation suggesting that under-achievers tend to be more undependable, restless and impulsive.

TABLE 1. SUMMARY OF MAIN RESULTS

Procedure	Measure	*N* in each group	% above median HA	% above median UA	*P**
(1) *General Morale*					
Personality Inventory	Personal Morale	49	53	49	NS
Self-Description Adjective Checklist	Satisf. with Life	49	51	45	NS
Single Question	Satisf. with Life	49	49	49	NS
(2) *Emotional Stability and Maturity*					
Personality Inventory	Cynicism	65	49	47	NS
Personality Inventory	Impulsiveness	65	36	66	0·01
Personality Inventory	Deviant Adventurism	65	40	64	0·01
Mooney Prob. Checklist	Pers. Psychol. Relat.	25	32	68	0·02
Self-Description Adjective Checklist	Emot. Stab. and Matur.†	49	73	31	0·001
(3) *Vitality and Self-Reliance*					
Personality Inventory	Self-Confidence	49	60	34	0·05
Personality Inventory	Self-Assertion and Initiat.	49	57	45	NS
Personality Inventory	Self-Reliance	49	51	47	NS
Personality Inventory	Need for Approval	49	49	47	NS
Mooney Prob. Checklist	Health and Phys. Develpm.	25	48	48	NS
Self-Description Adjective Checklist	Vigour	49	53	49	NS
(4) *Peer Adjustment*					
Mooney Prob. Checklist	Soc. Psychol. Relat.	25	52	52	NS
Self-Description Adjective Checklist	Soc. Solidarity Orient.	49	51	49	NS
Single Question	Relat. with Boys‡	49	‡	‡	NS
Single Question	Relat. with Girls§	49	§	§	0·05
(5) *Peer-clique Norms*					
Clique-Description Adjective Checklist	School-Ach. Orient.	65	65	42	0·05
Clique-Description Adjective Checklist	Pos. Attit. to Authority	65	60	39	0·05
Clique-Description Adjective Checklist	Violat. Adult Standards	65	35	58	0·05
Clique-Description Adjective Checklist	Excitement Seeking	65	33	63	0·01
Clique-Description Adjective Checklist	Satisf. with Life	65	65	30	0·001
Clique-Description Adjective Checklist	Approved Non-Acad. Ints.	65	49	51	NS

*Based on two-tailed median test (Siegel, 1956, pp. 111-116).
†See text.
‡Three single questions (see text), none significantly differentiating at the 0·05 level.
§Three single questions (see text), each differentiating significantly at the 0·05 level.

VOL. 2 1961

Vitality and self-reliance

Only one of the six measures in this area, namely the Self-Confidence scale, differentiated at the 0·05 level (in the expected direction) between the two groups. The lack of differentiation of certain of these measures could be explained by their unreliability (see description of measures, above). However, the results as a whole suggest that high- and under-achievers differ only slightly, if at all, in the area of general vitality, self-reliance, and self-confidence.

Peer adjustment

The two groups did not differ in any of the measures of reported social adjustment with other boys. About two-thirds of each group said they 'pal-ed around regularly' in a group of four or more boys; and of the remaining third, four out of five indicated they saw at least three friends regularly. None said they had no regular friends.

The under-achievers as a group reported slightly more dating of girls, getting along with girls slightly better, and slightly greater satisfaction with their relationships with girls ($P<0·05$ on each question).

Peer-clique norms

All but one of the CDAC categories differentiated significantly in the expected direction. Under-achievers more often described their friends as showing a negative school-achievement orientation, a negative attitude to authority, violations of adult laws and standards, excitement-seeking, and dissatisfaction with life. The two groups did not differ in reported non-academic, socially approved interests.

It should be added that the proportion of under-achievers who checked specific items indicating a negative attitude to authority or violations of adult standards by their friends was a minority. Thus, to take the most differentiating items, 31 per cent of the under-achievers (as against 9 per cent of the high-achievers: $P<0·001$) checked "rebellious". The percentages for "smoke a lot" were 21 per cent to 2 per cent ($P<0·001$); for "drink heavily sometimes", 22 per cent to 5 per cent ($P<0·001$). Likewise, in the excitement-seeking category, the proportion of under-achievers checking "daredevils", the most extreme of the three items, was 29 per cent (as compared with 14 per cent of the high-achievers, $P<0·05$).

On the other hand, two-thirds of the under-achievers (as against one-fourth to one-third of the high-achievers: $P<0·001$) checked one or both of two milder items: "always looking for excitement" and "restless". Each of these items correlated significantly ($P<0·01$) with the other and with scores on the anti-authority and standard-violation categories. The item "restless", it may be added, accounted for most of the difference between the two achievement groups in the Satisfaction category.

Gough's theory needs to be qualified by noting explicitly the wide overlap between bright high- and under-achievers with respect to asocialization tendencies; much variance remains unaccounted for. Further research might start by identifying four critical subgroups of bright boys (or bright girls): socialized high-achievers, socialized under-achievers, asocial high-achievers, and asocial under-achievers. The main focus might then be on comparing how the two socialized groups differ from each other and how the two asocial groups differ from each other.

SUMMARY

A group of 49 bright high-achieving high school boys was compared with an equated group of under-achievers in questionnaire measures of personal-social adjustment.

(1) The two groups differed little in self-described *general* emotional and social adjustment.

(2) Considerably more under-achievers described themselves as restless, impulsive, adventuristic, undependable and irresponsible; and as belonging to cliques characterized by (a) negative attitudes to school achievement, (b) opposition to authority, and (c) restless excitement-seeking.

(3) The results support Gough's view of academic under-achievement as a form of *individual asocialization*, and suggest that this pattern tends to be anchored in *peer-clique asocialization*.

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VOL. 2 1961

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THE PREDICTIVE VALUE OF DEVELOPMENTAL TESTS IN THE FIRST YEAR, WITH SPECIAL REFERENCE TO THE DIAGNOSIS OF MENTAL SUBNORMALITY

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INTRODUCTION

IT IS commonly stated by psychologists that developmental tests in infancy have no predictive value. I disagree with this view, and have discussed the reasons for my disagreement in detail elsewhere (Illingworth, 1960). I believe that one of the chief reasons for the supposed lack of predictiveness of developmental tests lies in the fact that psychologists have studied a selected population, having excluded mentally subnormal infants from their material. This was done, for instance, by Bayley (1933), Wittenborn (1957) and others. Bayley's paper, to which reference is usually made in discussions of this subject, is an altogether admirable one, as long as it is realized that her material was highly selected, mentally subnormal infants being deliberately excluded, and that follow-up studies showed that the mean I.Q. of her sample was well over 100. She concluded that developmental tests in infancy correlated so badly with subsequent I.Q. test scores, that the tests in infancy had no predictive value. Wittenborn's conclusion was similar. It is not right, however, as a result of an absence of correlation in children at one end of the intelligence range, to generalise about the predictiveness of tests in all children over the whole of the intelligence range. In this paper I shall show that in fact developmental tests on infants with mental inferiority have considerable predictive value.

Material and method of study

I have kept a record of all infants who were thought in my Department at the Children's Hospital, Sheffield, or in my Well-Baby Clinic at the Jessop Maternity Hospital, Sheffield, to be of below average intelligence. I have taken many precautions to ensure that no name is lost and that every effort is made to follow up all infants to school age. We use a triple indexing system in an attempt to avoid omissions. The diagnosis on the child's notes is indexed by the hospital records office. The secretaries of my department keep their own index. I record every diagnosis of mental inferiority (and also of cerebral palsy and other developmental problems) on my own punch card system, and all notes of children falling into these categories are filed separately in my department. From this system it is most unlikely that any children diagnosed as mentally subnormal have been lost to the study.

For the purposes of this investigation I have excluded all mongols, cretins and hydrocephalics, in that the diagnosis of these conditions is relatively obvious. There

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are no other exclusions. Approximately 20 per cent of the children were referred on account of backwardness in development. Many others were referred on account of convulsions. Others were referred for a wide variety of reasons, such as bronchopneumonia, urinary tract infections, and other general medical conditions. Thirteen were found in the ordinary infant follow-up clinic at the Jessop Maternity Hospital, to which children are not referred from outside doctors.

The diagnosis of mental inferiority was made in the course of the ordinary clinical examination of infants in the outpatient department or the wards of the Children's Hospital, or in the Well-Baby Clinic of the maternity hospital. I believe strongly that rough developmental assessment should be a part of the routine clinical examination of any infant, just as much as the examination of the heart and abdomen. We have no special clinic for developmental assessment. Almost all the infants were seen by me. Most of the opinions were based on a single examination, but in a few instances the opinion was made after several examinations had been made.

Once the diagnosis was made and recorded on the notes, the child was included in the series, even though subsequent examination, even one or two months later, indicated that the initial diagnosis was proving incorrect.

VOL. 2 1961

The developmental tests in all cases were modified from those of Arnold Gesell. I have described elsewhere (Illingworth, 1960) simple modifications of Gesell's tests which make them applicable to ordinary clinical paediatric practice.

Most of the children were followed up in a routine manner and finally assessed at school age. Some were not seen after infancy until the final assessment. In the great majority of cases the final assessment was made by school medical officers who did not know the original assessment, using for the most part the standard I.Q. tests, especially the Stanford Binet and Terman-Merrill tests. In a few odd cases the final assessment was made in my own department, but if there was any doubt about the test score the child was examined in detail by an educational psychologist.

RESULTS

In Table 1 it will be seen that the diagnosis of mental inferiority excluding mongolism, hydrocephalus and cretinism, was made in 122 infants in the first year (58 in the first 6 months and 64 in the second six months). Of these, 30 died within 5 or 6 years of birth—a notably high mortality. Most of the children died at home, so that port-mortem examination was only possible in ten cases. In all of these ten there was a gross abnormality of the brain. Of the 92 who survived, 4 could not be traced. In one child, who was severely deaf, it was felt that an accurate I.Q. score could not be obtained, but it was doubtful whether she was up to the average level of intelligence.

Of the remaining 87, 6 had an I.Q. score of 100 or more on follow-up examination; 3 had an I.Q. score of 90–99; 9 had a score of 80–89; 8 had a score of 70–79; 10 had a score of 50–69; and 51 had an I.Q. score of less than 50. It was known that three who died were idiots.

Of the 39 survivors who were diagnosed in the first six months and followed up, 3 had an I.Q. score of 100 or more, 2 had a score of 90–99, 4 had a score of 80–89, 3 had a score of 70–79, 8 a score of 50–69, and 19 a score below 50.

Our records do not permit of an accurate comparison between the initial and

final assessments, because in many infants no grading other than mental retardation was made.

Of the 6 children later found to have an I.Q. of 100 or more, two were children with cerebral palsy, one with athetosis and the other with a spastic hemiplegia, both of whom had an I.Q. score of 100. Two children showed delayed maturation, one of them showing the clinical picture of minimal birth injury (Gesell). Both were full-term babies, and already retarded in the early weeks. One began to smile at the mother at 11 weeks, and was retarded in other milestones of development. She was not able to sit without support at 12 months, although there was no mechanical disability. At 9 years she was a bright normal girl with an I.Q. score of 118. The other child was thought at 2 months to be retarded. He had frequent convulsions in the first three weeks. At 2 months he had just begun to smile. There was complete head-lag on pulling him up to the sitting position. An air encephalogram showed what was thought to be cortical atrophy. A subdural tap was negative. It was obvious by 10 months that he was quite up to the average. At 9 years the I.Q. score was 122, and there was no disability.

The fifth child had a remarkable episode which commenced 2 weeks after birth. She was a full-term baby, born normally, and normally active up to 2 weeks of age, when she became drowsy and immobile, and slept all day and night. An air encephalogram was thought to show cortical atrophy on the right. She remained drowsy and apathetic and had constant writhing movements in the limbs. The electroencephalogram, subdural tap, virus studies and tests for toxoplasmosis were negative. She was thought to be severely retarded. After about 6 weeks she suddenly began to improve, and by 4 months it was realized that she was entirely normal. Follow-up examination confirmed this.

TABLE 1. THE DIAGNOSIS OF MENTAL INFERIORITY IN INFANCY, EXCLUDING MONGOLISM, CRETINISM AND HYDROCEPHALUS

Age of first diagnosis of mental inferiority	Final assessment								Total
	IQ 100 or more	IQ 90 to 99	IQ 80 to 89	IQ 70 to 79	IQ 50 to 69	Below 50	Died	Uncertain or not traced	
First 6 months of life	3	2	4	3	8	19	16	3	58
Second 6 months of life	3	1	5	1	6	32	14	2	64
Totals	6	3	9	4	14	51	30	5	122

The sixth child was seen at the age of 6½ months for assessment for suitability for adoption. He had been brought up in an institution from the age of 2 weeks. His mother and his maternal grandmother were mentally defective. I wrote in my report: "There is no doubt that he is fairly considerably retarded, being about the 18-week level in all fields. This may be the result of being in an institution since the age of a fortnight, and it is perfectly possible that in a good foster home he would

catch up to the normal". I saw him once more, at the age of 18 months. He was still retarded, and not nearly able to walk. He had begun to stand holding on to furniture at 15 months. He was not saying any words. He could not get a spoonful of food into his mouth. He had begun to creep at 15 months, to sit without help at 13 months and to go for objects and grasp them at 13 months. On examination his general level was that of a 12-month-old baby. On follow-up examination by a school medical officer on my behalf, he was found to be a normal boy with an I.Q. score of 114. Whether this was an example of delayed maturation or the effect of emotional deprivation or both I cannot say. He was placed in a foster home at 7 months and adopted at 18 months.

DISCUSSION

My figures show that mental inferiority can be diagnosed in the first year of life, apart from the obvious conditions of mongolism, cretinism and hydrocephalus, with an accuracy of about 75 per cent (65 out of 87 survivors subsequently having an I.Q. below 70). If repeated examinations are made the margin of error is likely to be very small. These figures were obtained not in a special clinic, but in ordinary paediatric practice. In my opinion almost any experienced paediatrician would obtain similar figures, though naturally I cannot vouch for this, and I cannot say how many would be correctly diagnosed on clinical impression only, without the use of Gesell's methods.

VOL. 2 1961

It would obviously be desirable in theory to know how many infants turned out to be subnormal, when they had been passed as normal. It would clearly be impossible to determine this without having intelligence quotient tests carried out on all the children who had ever passed through my hands in the first year, numbering many hundreds, and that would be impossible. On the other hand it is true to say that none of the mentally subnormal children seen by me at the Children's Hospital, Sheffield, had been seen by me in infancy and passed as normal, with the exception of odd cases of degenerative disease of the nervous system.

There is no satisfactory evidence at present that mental superiority can be diagnosed in infancy, though I would feel that in a limited number of infants, a minority of all superior ones, the diagnosis probably can be made with fair accuracy in the early weeks, but I have no figures as yet to prove it. However, it is of far greater practical importance to be able to diagnose mental inferiority than to be able to diagnose mental superiority, especially in assessing infants for the purpose of adoption.

It is obvious that in a study which purports to determine the overall predictive value of tests in infancy, all types of infant should be studied without any exclusion, for otherwise generalization is impossible. There is more need for studies on selected groups, in order to learn more about the predictive value in mentally inferior or mentally superior infants, but generalization from the findings in either group would be impossible.

In my opinion the correlation between test scores in infancy and in later years will never be high, except in the case of subnormal infants. The reasons for this opinion are many. The diagnosis of mental subnormality in infancy is much easier than the diagnosis of mental superiority. The history-taking, examination, and

especially the interpretation of the findings, demand interest in the subject, experience, and the willingness to learn from experience. There are special difficulties in handicapped children, especially those with athetosis. Delayed maturation, in individual fields or in development as a whole, is relatively common, so that fairly considerable backwardness in the early weeks may be followed by average or superior progress later. Degenerative diseases, including hypsarrhythmia, cannot be anticipated, nor can the occurrence of other conditions which damage the intellectual functions, such as meningitis, encephalitis, head injury, lead poisoning, or hypoglycaemia. The child's intellectual progress may be retarded by environmental deficiencies, such as emotional deprivation, so that although one's assessment of his developmental potential may have been accurate, he subsequently functions at a sub-optimal level. Conversely, an exceptionally good environment may lead to an unexpected improvement in a child's performance. Children may appear to be severely retarded after an attack of encephalitis, and yet make a remarkable recovery later. Repeated examinations are not always possible, so that the rate of development cannot be assessed. For these and many other reasons developmental assessment will always be difficult, and accurate prediction will in many cases always be impossible.

Totally unnecessary mistakes in assessment will continue to be made. Those who attempt to assess an infants' developmental status purely by objective tests, without any physical or developmental history, and without a proper physical and neurological examination, including measurements of head circumference, and without follow-up examinations to determine the rate of development, will inevitably make unnecessary mistakes. In the same way those who depend purely on sensorimotor tests will fail to note other aspects of the child's development which are much more important for the diagnosis.

The fact that there are many difficulties and that there always will be such difficulties, even though more accurate tests may be evolved in the future, does not indicate that developmental examination in infancy is of no value. As we gain experience, and learn more and more from follow-up examinations, we shall know more about the variations which may occur, and reduce the margin of error. The difficulties in developmental prediction are a challenge to all of us.

SUMMARY

One of the main reasons for the popular belief that developmental tests in infancy are of no value lies in the fact that studies on which that opinion was based were made on selected groups of babies, from which mentally subnormal ones were excluded.

It is not reasonable to study infants from one part of the intelligence range and to generalize for the whole range from the results.

A follow-up study of infants thought to be mentally retarded in the first year, excluding mongols, cretins and hydrocephalics, showed that the diagnosis of mental inferiority can be made in infancy with a considerable degree of accuracy.

Of 122 children who were followed up after a diagnosis of mental inferiority in the first year, 30 died, and 65 out of 87 survivors had an I.Q. score of less than 70.

There were similar figures in the case of those thought to be mentally subnormal when examined in the first six months.

Reasons are given for thinking that there will never be a high correlation between tests in infancy and those in later childhood, except in the case of mental subnormality.

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VOL.
2
1961

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"MATURATION"—A REPORT ON THE FIRST EUROPEAN CONGRESS OF PAEDO-PSYCHIATRY*

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THE first European Congress of Paedo-Psychiatry was devoted to different aspects of maturation. This report will concentrate on the most essential and most coherent topics of the Congress (which have already been reported in print†), giving only a passing glance at various communications which will be published *in extenso* in 1961.

A certain number of papers were devoted to the most obvious aspect of maturation—the biological. It is traditional to oppose maturation—as a kind of endogenous evolving schema—to the action of the environment. We shall see, however, that the very term maturation has been regarded from a completely different point of view by other schools of thought.

Within the framework of a biological concept, the first report by J. L. Camus and C. Koupernik was devoted to the endocrine glands. The authors limit themselves to their actions after birth on the brain. They point out that during the phase of rapid cerebral growth, during the first three years, the endocrines are relatively silent. Proceeding with their analysis of the various forms of endocrine activity, they attach little importance, in this context, to somatotropic endocrine action on the brain. The thyroid hormones seem to them to act mainly as energizers. With regard to the gonadotropic hormones—the cortico-suprarenal and the sexual—it would seem unlikely that they play any important role in the normal subject before puberty.

In this phase it is well to be suspicious of facile schemata; particularly the attribution of the final orientation of the libido entirely to the influence of sex hormones; a whole series of experiments, e.g. by Goldstein, Beach, and Zuckerman bear this out.

Next, the lessons from pathology were considered, and it is clear that the disorders of the thyroid yield the richest information.

When a *rapporteur* is faced with the painful task of analysing his own report, which no longer satisfies him, he has a choice of two attitudes: omission or self-criticism. We have adopted the latter, not from masochism, but from a concern for truth. It seems to us, on re-reading—and after friendly discussion with Jean Tusques, one of the writers who has given most thought to the problem—that we have misinterpreted his thought. This will emerge clearly in the second volume of reports; suffice it to say that we have failed to distinguish clearly enough between the effects of the thyroid on morphogenesis and on metabolism respectively.

Finally, the various aspects of the psychopathology of precocious puberty came

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under review. Here again, Dr. H. Stutte (Federal Germany), who has made a special study of intellectual and emotional disturbances of abnormal pubertal states, made a valuable contribution.

The second paper, by J. E. Gruner, was concerned with the histological study of the maturation of the nervous system. Gruner considered in turn the maturation of neurones, that of other nerve tissue, that of functional systems, and finally the agents of maturation. The first section deals with the history of neuroblasts. The considerable dimensions of neuronic prolongations in relation to the small volume of the perikaryon require an intense degree of protein synthesis, while its functioning requires an enzyme activity which is polarized on the one hand at the level of the perikaryon, and, on the other, at the synaptic end.

There are three disciplines through which we can approach the study of this development: cytology in the traditional sense, cell-chemistry, and electronic microscopy. The first of these allows us to group the phenomena in the following manner:

(1) A phase of nuclear maturation and appearance of functional units. (2) A phase of maturation of the perikaryon (development of the Nissl corpuscles and outgrowths). This phase is sudden, and of the greatest interest, insofar as it signalizes the appearance of the first thalamic fibres in the cortex, and probably corresponds to the establishment of cortical electrogenesis. (3) A third phase is characterized by a considerable increase in the amout of cytoplasm in certain cells and formation of numerous collaterals with synaptic endings, a neuronal specialization, and, finally, a specialization of the enzymes (adrenergic, cholinergic and histaminergic).

Cellular chemistry shows that a cytologic crisis is accompanied by a chemical and, especially, an enzymic one. Thus, in the chick embryo, acetylcholine-esterase appears before the formation of the vessels.

Finally, electronic microscopy is still too recent a development to give us a clear and complete picture of maturation. Gruner reports the result of his own researches on sections of cortex from the posterior third of the hemisphere in the embryo chick of 8–17 days, and of a 2-day-old chicken. This enabled him to demonstrate that the nucleus grew up to the 17th day, and that the relation of the perikaryon to its outgrowth decreased rapidly after the 14th day. Biological equilibrium in the neurone depends on the establishment of synapses, as shown by experiments in which the focus of wing growth is ablated in the chick embryo. In the same manner, in Werdnig-Hofmann disease, the malformation of the neuro-muscular junction is the cause of a secondary degeneration of neurones Finally, it may prove difficult to distinguish between maturation and ageing of the cell structure. Even the cell is not immune to philosophy.

An equally remarkable contribution dealt with the study of non-neuronal tissue, such as the sheath of Schwann, glia, ependyma, meninges and blood-vessels; the meninges remain undifferentiated almost up to the time of birth, and blood-vessels are developed late and slowly. Finally an essential feature of perinatal pathology should be noted: the haemato-encephalic barrier is insufficient in the immature brain. On the other hand, immature neurones are more sensitive to carbon dioxide intoxication, and less so to anoxia, than the adult brain. But this maturation of the higher centres and of supporting elements does not occur in a featureless manner; the

VOL. 2 1961

general tendency is for the development of functional units or mechanisms. Therefore the posterior longitudinal bundles and the motor proto-neurones are the first to form, shortly followed by the sensory proto-neurones, and the auditory and vestibular sensorial systems. The vegetative system goes through a critical phase at the 11th day, and develops over a long period. Different parts of the neo-cortex develop at different rates; most slowly in the central opercular region. This is important, since those regions which are the latest to form are the most fragile. The formation of cortical sulci is brought about by the convergence of multiple factors, some neuronal, others reticular Finally this report distinguishes, in respect of factors of maturation, between intrinsic, environmental, humoral, and endocrine factors.

A. Schwenk (Federal Germany) presented a valuable report on the biochemical aspects of endocrine maturation. In particular he demonstrated that differences in oestrogen levels, between boy and girl, appear from the eighth year; equally the amount of 17-ketosteroids is about a third higher in boys than in girls from this age. Finally the endocrine determinant of the various sexual structures is analysed.

C. Dreyfus-Brisac and N. Monod reported on their unique study of the development of cerebral electrogenesis in infancy. They first recall that electroencephalographic activity as registered by present methods finds its origin in the slow dendritic potentials. On the other hand, maturation varies from one species of animal to another, even of the same class. The potentials aroused in an immature animal have a longer duration and more diffuse localization than in the adult subject. Finally, the progressive acceleration of alpha rhythm is not a sufficient criterion of development, which can only be adequately described by the use of various criteria, some concerned with duration (continuity or discontinuity) others topographic, others dynamic (reactivity). The authors studied the premature infant successively from 5 to 8 months of foetal age, which is characterized by discontinuous and paroxysmal rate of activity, lack of synergism between the hemispheres, low reactivity, and and absence of differentiation between waking and sleeping. At this stage (between 5 and 8 months) there is rapid progress, so that at the age of 8 (foetal) months the waking rhythm differs from that in sleep. It is noteworthy that this age of 8 months is more important than the normal age, at term, of 9 months.

A second important stage occurs at 3 months (after birth) when an occipital theta rhythm of 3 and 4 cycles/sec appears for the first time. It is not till 5 months that a theta rhythm of 5 cycles/sec appears, which is the precursor of the adult alpha rhythm.

From 3 months to 3 years, during the waking period, there is an acceleration in occipital activity, while the changes occurring in sleep become much more complex. We must not forget that the sleep rhythm of a small child changes considerably with age. The authors distinguish a first stage in the sleep rhythm characterized by amplification and slowing in the occipital region on going to sleep, followed by spindles, then by a few slow Rolandic spikes. From 8 months to 2 years a first phase of hypersynchrony on sleeping (4 cycles/sec; 50–60μV) is followed by a diminution of amplitude, then by supervening of spikes and spindles. On the other hand, from 2 to 3 years, hypersynchrony can be replaced by a flattening, while spikes become sharper. It is not till after 3 years that sleep produces a rhythm like the adult's (disappearance of occipital rhythm, and Rolandic spikes, sometimes a series). In

general, in the course of development, spindles will appear as sleep becomes deeper, while the Rolandic spikes become even sharper, so that each stage has a characteristic 'pattern' of sleep.

The second part of the report is devoted to pathological conditions. The authors draw attention to the frequency of a slow anterior dysrhythmia of a polymorphic or monomorphic delta type, of slow spikes in pathological cases in the first two months of life. This type of pathological picture is not found before the stage of 8 months of foetal age. Another important factor in the electrical pathology of the neo-nate is abnormal lability during sleep characterized by hyperhythmia. Finally, as regards paroxysmal crises, this report reminds us that a crisis of the grand-mal type does not exist in the new-born and that one never finds a generalized discharge of spikes at this stage.

The crises of the new-born are mono-hemispheric, but are capable of being propagated from one hemisphere to another afterwards. There is no necessary correlation between the clinical aspect and the encephalogram in regard to these paroxysmal manifestations. The crises of the premature infant appear to be different from those of the new-born, being essentially clonic, brief, and shown by 'salvoes' of spikes. In the infant it is also possible to observe paroxysms of grand-mal, while petit-mal is very exceptional; in any case, bilateral synchronous spike-wave curves are not found. The electrical record typical of petit-mal only appears at the age of 3. We should also note that, according to Gibbs, the electric foci are displaced backwards. The importance of the 2 main stages, i.e. 8 months foetal life and 3 years of age, is obvious in respect of both physiology and pathology. The authors' longitudinal studies have shown them that some infants can have a sleep rhythm of adult type from 1 year onwards, although others still showed a hypersynchrony beyond the age of 4. Other aspects of this electrical ontogenesis can show actual phasic differences. These longitudinal studies have also been concerned with cases of abnormal children, and thus the authors raise the question of how to tackle the problem of an abnormal E.E.G. when there is no indication of a clinical disturbance.

VOL. 2 1961

The late Professor T. P. Simson (who died suddenly in February 1960) had the courage, despite the rapid progress of her illness, to prepare a report on the ontogenesis of the higher centres in relation to child development. The new-born infant shows only unconditioned reflexes, some alimentary, others of defence (eye blink, general motor reactions, etc.). Other unconditioned reflexes will appear in the course of growth, while others existing at birth will change.

As regards the establishment of conditioned reflexes, Simson recalls that these depend strictly on the development of receptor mechanisms. From birth there are signs of vestibular, cutaneous, thermal and pain sensations, while visual sensation is very elementary at birth, and lags behind the auditory. The earliest conditioned reflex properly so-called was discovered by Koltsova about the 11th day: at this stage 66 per cent of infants become calm when in the feeding position, as against 5 per cent on the 9th day; this type of conditioned reflex will then increase in complexity in relation to the elaboration of the sensory and perceptual mechanism. The formation of most conditioned reflexes, at first vestibular and auditory, then visual, is already quite advanced at 2½ months. But this may be even earlier in premature babies, thus showing the effect of environment. As the child gets older, conditioned

reflexes are formed more rapidly, while passive inhibition diminishes. At first the child acquires the majority of its conditioned reflexes by imitation (the first system of sensori-motor signals), then speech acquires great importance. Conditioned reflexes formed at the level of the second signalling-system were then referred to, and suggest an interesting approach to general pedagogic problems.

The report by J. Scherrer, F. Contamin and R. Verley, dealt with evoked electro-cortical reactions, and with the study of motor behaviour and neuro-vegetative phenomena, in mammals inferior to primates. Firstly, the nerves or receptors are stimulated, causing a certain amount of cortical activity, which is amplified; secondly, certain cerebral zones are stimulated, and motor or neuro-vegetative responses recorded. The study of the motor response of the rat foetus shows that the 15th day is a crucial date, insofar as it is marked by the joining of motor neurones with the muscle fibres. It is then that spontaneous activity starts, which proceeds in the cephalo-caudal direction. The 15th day also sees the beginning of reflex activities in the rat. According to Coghill, it is not a question of the successive appearance of fragmentary activities, but a differentiation starting from a global kind of activity. On the other hand, Windle tends to think that there is a progressive integration. Modern studies, notably those of Scherrer and his colleagues, tend rather to support Coghill. Another important observation: in the mammiferae, the respiratory musculature is capable of reacting to stimuli quite early, while the cardio-vascular system has only rudimentary reactivity at birth. Post-natal electro-physiological studies of animals demonstrate that synaptic connections already exist before the corresponding receptive organ is functioning. Studies of electrocortical responses also show that myelinization is not essential to the conduction of incoming impulses. Scherrer and Oeconomos showed in 1953 that induced electrical activity precedes spontaneous electro-cortical activity in the course of functional maturation.

Last but not least, there is no absolute parallelism between different species of mammals. For example, the cat and the rabbit are born in a low state of maturation but develop rapidly. The rabbit reaches maturity after 1/25 of its life-span, and the cat after 1/15. Even if man had a life-span of 100 years he would reach maturity, at this rate, by the age of 4 or 6. Thus all extrapolations from animal to man are extremely hazardous.

We will pass quickly over the report made by M. Verdun on anthropological biometry and maturation, because we consider that the author's conclusions, if not his method, fail to correspond to scientific criteria as generally accepted. With Friedeman's paper we are on a fresh tack, because this author, while starting from a biological basis (notably his description of secondary sexual characteristics) studies the emotional, moral, intellectual and social aspects of maturation. Notably in his section on emotional maturation, we find a sort of longitudinal study of the formation of the concept of the object. With regard to social maturity, the work of R. F. Nielson seems to demonstrate that from the age of $6\frac{1}{2}$ the child becomes a social being capable of collaborating in a common task. It would seem that there is a phase common to both sexes up to the age of 6, followed by a second phase of differentiation up to adolescence. Friedeman adumbrates an interesting parallel between social and biological maturation, especially between 6 and 10. He considers that there is a real physiological crisis corresponding, according to German authors, to a primary

change in gestalt. (In our opinion, this hypothesis of a physiological crisis at 6 years is not proven. We are also critical with regard to the contention that there is a centripetal tendency in the girl, directed to the family, and a centrifugal one in the boy.) In this very complete report there is another interesting observation: in 1956 the cases of early menses appearing between 9 and 11 were 60 times more numerous than in 1906, thus showing the influence of environmental factors in maturation.

Van Stockert's report also deals with the effect of experience on adolescents. Thus the upheavals produced by two world wars and the collapse of traditional values, seem to the author to be determining factors.

With the report by Fontes, dealing with maturation after puberty, we reach more psychodynamic concepts. He stresses the dialectic balance between progression and regression. Preceding authors dealt with maturation as a potential force inherent in living matter, strongly determining the direction in which development took place; here the same notion is used in the psychological sense of a state of equilibrium. This state of equilibrium cannot be attained or remain stable unless the subject has passed through the crises of the years preceding puberty, i.e. the oedipal situation, jealousy, frustration, being an only child, etc. On the other hand, this development can only be understood on the human level. In effect, the adult animal finds an environment which accepts him just as he is, while on the contrary, man, the "eternally maladjusted", seeks to perfect it, whence a continual state of insecurity and anxiety. This anxiety reaches its height at the time of adolescence, that is to say at the moment when the human being takes flight and leaves the protection of its parents.

VOL. 2 1961

Having left behind endocrines and neurones, we find ourselves in the field of psycho-analysis with the report by Mme. J. Favez-Boutonier on psycho-analysis and maturation. She firstly recalls Freud's insistence on the concept of instinct. The succession of stages which he describes is essentially attributes to the action of such instinct. This has led Daniel Lagache, one of the leading French psycho-analysts, to speak of maturation of the instincts. Yet there is a second tendency, already implicit in the writings of Freud, which allows considerable influence to the effect of experience, of the environment, and thus certain disciples of psycho-analysis have gradually slipped into 'culturalist' positions. The author concluded by saying that it is an essential element of psycho-analysis to envisage human instinct as involving conflict. This is why the term maturation is somewhat misplaced in psycho-analysis, since it implies an idea of stability, whose static character is opposed to all the implications of this doctrine. On the psychic plane, man is never completed; one can speak of his 'becoming', but not of his maturation.

Cl. Launay, A. Doumic, and J. Trelat undertook the study of maturation in the family setting. Such a study has the advantage of being synthetic, and placing the problem in the actual human framework. The authors distinguish a "preconscious" stage lasting till 3 years of age, marked especially by the predominance of the mother; the oedipal stage from 3 to 6, then a latent period from 6 to 12, and finally adolescence. Contrary to the other reports, this one is studded with clinical examples which render it very vivid and instructive. These examples illustrate various special cases: that of a weak father, of grand-parents living in the home, of children brought up by a mother alone, of adopted children, etc.

E. Miller studies maturation in the setting of the child's school life, stressing the fact that school denotes the entry of a child into an abstract system. Thus we can observe the opposite types of reaction, one being an attachment to concrete objects—a genuine defence against anxiety—and the other a flight into abstractions devoid of any affective significance. He referred to an important distinction between intellect and intelligence made by Barzun, which causes us to judge of a child's potentialities in three dimensions: his intelligence quotient, the family culture, and ecology. In other words, the school allows us to envisage the development of a child from a point of view which is both dynamic and realistic, and which is influenced by the field-theory of Lewin. The school thus appears as a kind of incubator of social values, while at the same time it produces certain anti-social tendencies, in the form of "school-phobia". This condition, which is quite frequent, can result from various factors, such as disturbance in relationships between parents and child; a difficulty in social relationships closely resembling jealousy between siblings; a difficulty in adopting the teacher as a parent-figure; anxiety caused by some forms of learning, such as mathematics. Finally two essential processes must be distinguished in order to understand the meaning of maturation in the school life of the child: substitution, and sublimation.

S. Ahusjo has studied scholastic problems from another angle, based on some remarkable statistical studies which he has initiated in Sweden. We should note, to start with, how elastic is the Swedish system, which allows about 3 per cent of children (the legal age for starting school being 7) to start their schooling a year later. There are also various types of special classes, some of which are designed for the immature child who is not yet ready to face ordinary schooling, others for children with a slight intellectual handicap (that is with an I.Q. 70–85), others for the word-blind, and a fourth variety termed 'observation classes' for children whose behaviour is unsatisfactory. There are also special classes for different types of sensory handicaps; open-air classes for delicate children; for cases of cerebral palsy; and finally special school for children who are so handicapped that they cannot lead a normal or near-normal school life. It is to be noted that there are significant differences in the sexes. The proportion of boys suffering from dyslexia is greater than would be expected on statistical grounds. Also 50 per cent of boys in normal classes who have been investigated show symptoms such as instability, aggressiveness and destructive tendencies. These are only found in 20 per cent of girls, whose most frequent symptoms are reluctance to speak, a tendency to withdrawal, asthenia, depression and psychosomatic symptoms.

G. Bollea and A. Novelletto were concerned, in their interesting report, with the medico-legal implications of the concept of maturation. They insist on the need to examine every case thoroughly in order to decide on imputability or legal responsibility, according to biopsychological immaturity and not merely to age. The factors which maintain this immaturity are numerous, and the Italian authors insist especially on the importance of harmony or disharmony between these factors. Thus some subjects who might appear to be 'hypermature' in some respects, turn out to be 'dysmature', insofar as this accelerated growth occurs at the expense of a lack of balance in other respects.

The report by R. Dellaert deals with a similar question. The author tends to

renounce the idea of 'responsibility' while retaining that of 'fault', thus preserving a quality of 'sanction', for his decisions instead of merely depending on psycho-pedagogic treatments, which are obviously ineffective. It goes without saying that this 'sanction' aims at eventual re-adjustment.

I. Van Lennep's report (circulated in roneotype) deals with vocational aspects of maturation, and stresses the fact that vocational success cannot be predicted simply in terms of I.Q., since another important factor, namely the social quotient, intervenes. His own studies have shown that children of relatively precocious puberty make better relations and show more spontaneous adaptability. Boys and girls who develop rapidly show a leaning to the arts, while those who develop more slowly are more attracted by technical pursuits. On the other hand the 'precocious' group when questioned before puberty as to the occupation which attracted them, expressed the ambition to be chauffeurs, aviators, naval officers, or engineers; while the 'slow' group were inclined to be missionaries, theologians or priests, watch-makers, mechanicians, etc. On the contrary the 'precocious' group showed profound aversion to legal or theological careers. In general the precocious group were easier to orientate than the slow. Besides this, Van Lennep singles out two other individual groups. The first, after a brilliant start, settles down at about the age of 20, at a lower level of achievement than would be expected, while the other on the contrary continues with a slow and regular progress, and blossoms out at about 30.

VOL. 2 1961

We will return later on to the many other communications which enriched this Congress; but would mention at this point the new direction taken by those psycho-analysts, especially Male, who have emphasized the importance of adolescence as a turning point in development. This stand-point seems to us more realistic than the constant reference back to conflicts in infancy. Male stresses particularly the danger that somatic and genital maturation may get out of step especially the suppression of instinctive life—which determines so many forms of pathological behaviour in adolescence.

We should also mention the excellent contribution of M. Soulé who described the maturational deviations produced by abnormal upbringing (children in public care). In most of these cases of these cases an active, intensive form of psychotherapy is required, rather than the "classic" method.

Another very definite point of view was expressed by Myassichtchev, who stressed the incompatibility between Pavlovian doctrine and psycho-analysis.

In conclusion, one may say that this first Congress has been marked by convergence, even between the representatives of disciplines as different as histology and psycho-analysis; it has also furnished a meeting point for specialists from all parts of our old continent to discuss their work and ideas. Moreover, the very theme of the Congress was such as to induce in all of us a dynamic attitude—the only one which allows us to apprehend fully that constantly changing creature, the child.

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BOOK REVIEWS

H. David and J. C. Brengelmann (Editors): **Perspectives in Personality Research.** Crosby Lockwood & Son, London, 1960, pp. 370, 50s.

A few years ago the International Union of Scientific Psychology became concerned about the ignorance displayed by psychologists regarding the work carried out by their colleagues in different countries. It was therefore decided to bring about an "effective penetration of ideas on the international level" by publishing a book, *Perspectives in Personality Theory*, in which a number of eminent psychologists of various nationalities gave an account of the theoretical framework within which each viewed the problem of personality. The result, as Gordon Allport pointed out in his introduction to that volume, showed up vividly the considerable gap between Anglo-American theories on the one hand and Continental theories on the other, and in fact the book's main achievement was to publicise the latter and thus acquaint Anglo-American psychologists with the state of Continental thinking in this area.

The present volume carries this venture in international publishing a step further. It is based on papers read at the Brussels Congress of 1957 and concentrates on research rather than on theory. This time, however, the balance between the two camps is altered, for now it is the Anglo-American psychologists, with their emphasis on empiricism and measurement, who provide far more of the chapters than their more speculative, philosophically minded colleagues on the Continent. In a field as complex as this, communication rather than integration must be the aim in bringing together a variety of contributions, and from this point of view the many divergent approaches make fascinating reading and certainly succeed in providing a number of different perspectives to personality research.

Yet the book as a whole is somewhat ill-balanced, and one wonders on what basis papers for inclusion were selected. A great many growing points remain unmentioned; on the other hand five of the eighteen chapters are all devoted to the intriguing yet relatively narrow topic of person perception. Or, if we are to use the distinction once suggested by Sears between the structure, dynamics, and development of personality as another means of classifying the contents, it emerges that structural approaches are hardly mentioned at all and that the great majority of reports are concerned with the dynamics of personality.

To readers of this Journal the three chapters on developmental aspects are likely to be of most interest, and particularly that entitled "Longitudinal Research in Personality Development". This includes four reports on research projects which have taken place in different countries on such topics as the development of cognitive functions (Inhelder and Noelting), changes in "coping" methods (Murphy), the interaction of parental attitudes and child behaviour (Skard), and the developmental trends to be observed in psycho-physical relationships (Thomas). Unfortunately each of these reports is extremely brief: a whole book, for instance, is about to be published describing Lois Murphy's investigation, and to have it compressed here in three pages serves it no better than a publisher's announcement would do. The other two chapters concerned with children are, however, much more adequately presented and are indeed amongst the best in the book. That by Miller describes an attempt to isolate in the context of a formal research project the defence mechanism of denial and describe the conditions which influence its manifestations, while that by Luria analyses the development of voluntary action in the child in a typically Russian manner—careful, experimental, physiologically based, and liberally sprinkled with quite unnecessary references to Pavlov.

That the basic aim of this series of publications, to foster the exchange of ideas and information on an international scale, is an excellent one cannot be doubted, and one must hope that further volumes will eventually emerge. It is also to be hoped that these will maintain the editorial standards shown by the first volume in this series.

H. R. Schaffer

HANS MAUTNER: **Mental Retardation: its care, treatment and physiological base.** Pergamon Press, London, 1959, pp. 280, 35s.

THE author, in a preface, states that this book does not pretend to be a textbook but is a compilation of some lectures given to the Staff of the Pineland Hospital and Training Centre in Pownal, Maine. Each of the twenty-five short chapters is therefore headed Lecture I, II, III, etc., and some of the material remains in lecture form, thus page 229 "Some weeks ago we saw in the Staff Meeting a low-grade girl with mitral stenosis". This method of presentation may be suitable to those seeking an elementary introduction to the subject, but for most readers it may make the book less attractive. This is particularly unfortunate as the author presents a comprehensive collection of facts and references which will be of value to many more advanced workers in the field of mental retardation. Indeed, one wonders how the less knowledgeable reader would manage to wade through the many brief but highly technical references to biochemical and therapeutic substances.

In its present form the book, with 1,100 references in the text, is more in the nature of an encyclopaedic summary of our present knowledge of the aetiology of mental subnormality. It should be both a useful reference book for workers in this field and a convenient aide-memoire for lecturers.

The most important feature of the book is its emphasis on the physiological basis of the various manifestations of mental retardation. In the last decade there has been a welcome change of attitude as to the causes of mental subnormality both in Britain and the United States, and Dr. Mautner adds his weight to this movement. The prevention and medical treatment of the conditions described are well presented, but only passing references are made to the aspects of social and environmental care which are of such importance today.

VOL. 2 1961

It is to be hoped that this book will reach a second edition in which the text and presentation are more on the lines of a textbook specifically on the physiological basis of mental retardation.

L. T. HILLIARD

P. M. PICKARD: **I Could a Tale Unfold. Violence, Horror and Sensationalism in Stories for Children.** Tavistock Publications, London, 1961, pp. 228, 25s.

How much horror, in films, comics and story books, can children take without harm? If we frown on violence and cruelty in present-day productions, what about the classical myths? What about Grimms' Tales? What about Shakespeare? Does their artistic value mitigate their horrific effect, and if so, how? Or, since children's play reveals how sadistic their own fantasies often are, is our concern misplaced—are we in danger of overprotecting them through our own squeamishness?

Those who, like this reviewer, have been uneasily aware of their own failure to think these questions through, should read Miss Pickard's book. It will provide them, not with simple answers, but with a reasonably articulate point of view that is still difficult enough to compel hard thought.

An educationist and psycho-analyst of many years' experience, the author also brings to bear the fruits of extensive reading, in a chapter on "Horror and Beauty in Literature". Later she explores the parallel between the artist at work and the child at play: both fuse the novel with the familiar, the intellectual with the unconscious; both extend the boundaries of the ego (i.e. its ability to cope) by first projecting and then assimilating repressed phantasies in a delicately balanced oscillation between inner and outer reality. Neither is always successful, and the reasons for the breakdown of both are considered. Out of this analysis arise certain criteria for judging the value of stories for children. They should touch sufficiently on emotionally significant themes, without which they remain jejune—and this implies an element of the horrific; but the horror must not be excessive, "aesthetic distance" must be maintained, and the story must be so constructed as to lead the hearer by stages toward a constructive resolution of the problem.

Do children know best what is good for them? The answer involves an historical survey of children's literature.

The fine art of story-telling was, we are told, virtually lost between the invention of printing and the Victorian age, when moralistic admonition further delayed its useful application to children's needs, with the result that almost up to the present time, children were "below subsistence-level" for the kind of stories that would help them in their emotional development. Consequently, they would devour anything they could get; but not uncritically. Miss Pickard reports on a survey she conducted of the likes and dislikes of London schoolchildren at the age of eleven. She found them

discerning in their views on comics and films; less critical of radio and television programmes (this was in 1953). Indeed, she seems to have been somewhat carried away by their enthusiasm for the "telly", then a comparative novelty, on which her comments are tentative and meagre.

The children's criticisms of comics are, however, valuable and revealing, and broadly confirm the criteria suggested above.

This is a discursive book. Besides the topics already mentioned it contains biographical sketches of Keats and Hans Andersen, the former exemplifying the well-integrated creative mind, the latter —whimsically presented in case conference form—the unintegrated. There are digressions in every chapter. Whilst these make for diversity of interest, they also make it necessary to go back from time to time and piece the argument together.

One then finds that certain relevant issues have not been raised. For example, since the author maintains that "all children are sensitive about dying", at what age and in what way does she feel that they can best take the death of a beloved character? How important to children is convincing characterization, as distinct from "hero" and "villain" types? It would have been interesting to have her principles illustrated with detailed reference to a number of children's classics. What about the graveyard murder in *Tom Sawyer*, or the wretched death of Ginger in *Black Beauty*? Either—in different ways—might upset a sensitive child; should we extirpate the passages on that account? Probably few would wish to do so, even if it were possible. It is for Miss Pickard's readers to decide whether she has adequately explained why.

TERENCE MOORE

HOWARD JONES: **Reluctant Rebels: Re-education and Group Process in a Residential Community.** Tavistock Publications, London, 1961, pp. 234, 30s.

DR. JONES presents a report of "Woodmarsh", an experimental English residential school for disturbed boys aged 10–14. This school seems to belong to the modern series of experiments in therapeutic community formation, using principles from psychiatry, penology, progressive education, utopian social philosophy and social science. The importance of love and acceptance and of a more democratic régime are stressed, but the new synthesis is already at work in Dr. Jones' insistence on the need to avoid the relative neglect of authority roles in the so-called progressive school movement. He believes that conventional, disciplinary schools often lead to the formation of an informal social and psychological 'underground', of anti-social cliques and attitudes deviating from those of society at large. The progressive schools, on the other hand, are seen as often encouraging disorganizing trends in the personal and social life which may replace the old problems with new ones.

Dr. Jones presents his report as the preliminary examination of a series of hypotheses.

(1) That a permissive and accepting attitude on the part of the staff is necessary to ensure the healthy emotional development of the children, and the open expression of social and psychological undercurrents renders them accessible to treatment.

(2) That organized interaction and group discussion on matters of significance to the children can give them valuable insights into their own personal problems and the nature of society.

(3) That group experience and acceptance can lead to group loyalty and finally group control, and that this can be a valuable aid in reformation.

(4) That the role of the adult, although permissive, should be both important and active and not the laissez-faire role advocated by some so-called 'progressive' educationists. And that the techniques to be used are highly skilled, being in the nature of psychotherapy.

The functioning of the Woodmarsh School where these propositions are used as the basis for policy, is taken to provide conditions for a rough testing of the hypotheses.

The actual test of the hypotheses—admitted by the author to be only a first appraisal—apparently consisted of participating in and observing the work of the school, which brought the author to conclude that on the whole the hypotheses seem well founded, and worthy of adoption. He quotes various cases exemplifying this favourable impression, and shows how the material can be organized and understood in terms of clinical and social science concepts—not often used in a sophisticated way in such schools. These are presented in non-jargon terms, one cluster relates to the problems of love and authority (the need for adult love, the need for group acceptance, the need for control). In relation to another cluster of factors, termed "The Discipline of Circumstance", he discusses how

staff can harness the forces of children's spontaneous activities, e.g. by assigning activities appropriate to individual needs at the time, or to specific age groups, by drawing children into participation in administrative decision, or by discouraging anti-therapeutic group processes.

All these strategies, activities and processes are seen as contributing to social and, to a more limited extent personal, insight. The staff's role as parental surrogates, who at the same time are teachers, administrators, and therapists, is interestingly discussed.

This book brings together in a clear, well-written presentation, a review of the relevant literature of the fields intersecting in such a children's institution: experimental education, juvenile delinquency, group dynamics, institutional sociology, psychotherapy.

In an Appendix, the author reports a small pilot sociometric study comparing two schools of the Woodmarsh type with two more traditional, authoritarian schools, not for success in producing well-adjusted citizens (an extremely difficult comparison, beyond the scope of the present study) but for several other characteristics possibly related to this, e.g. the orientations of the pupils toward the staff and each other. Within its limit of this pilot study supports the thesis that a school of the Woodmarsh type does not yield the dangerous consequences predicted by its conventionally-oriented critics, but has some success in the direction of more positive acceptance of adults and their norms. The effect of the more liberal régime on relationships *among* the children is more complex. However, the author argues that emotional development of children is more crucially dependent on their orientation to parental figures than to peers.

The author's sympathy with the school is a source of both strengths and a weakness. This is a piece of reasoned and documented advocacy, not a serious attempt at objective appraisal. Perhaps at present schools of the Woodmarsh kind need champions rather than critics, so that they may come to inhabit the land in greater numbers. I would be pleased to see this occur, but critical analysis is also necessary. This implies exposing defects and revealing unrecognized processes among staff as well as patients. This is difficult material to face and deal with, but essential to confront if further growth and development is to occur.

ROBERT N. RAPOPORT

VOL. 2 1961

IVY BENNETT: **Delinquent and Neurotic Children—a comparative study**. Tavistock Publications, London, 1960, 45s.

THE question as to how delinquent forms of behaviour differ causally from neurotic disturbances has been asked ever since psychiatrists were engaged in exploring the dynamic of the mental life. The differentiation has also been prompted by the medico-legal imperatives which demand valid reasons for assigning culpability. The neurotic child and adult, while not popular figures, are not subject to juridical scrutiny unless there are accompanying behaviour disorders, which are offensive to the social mores. It is important, that behaviour and its circumstances therefore call for early examination, in order that the law as well as the professions dealing with child development and its disorders should be equipped to treat the sufferer or the offender in accordance with legal and social safeguards and compassion for the individual.

Dr. Ivy Bennett has with great thoroughness investigated a group of children with neurotic disorders on the one hand, delinquent behaviour on the other. She brings to her task the experience of an analyst trained in the objective approach of general experimental psychology. Her psychoanalytic standpoint is 'Freudian', and her main source of inspiration in the field of delinquency is the late Dr. Kate Friedlander.

The author's research, with respect to design and method is a comparison of 50 delinquent and 50 neurotic children matched for age, sex and intelligence for the purpose of disclosing the processes in development from infancy to the time of inspection, which have determined the direction towards delinquency or neurosis.

A number of hypotheses, based on both clinical groupings and basic psycho-analytic dynamics are put forward and examined statistically by the Chi-square technique. The clinical material was derived from the usual child guidance clinics, in particular from the region where Dr. Friedlander worked. The Chi-square technique was adopted, because it was the only statistical instrument which could be used for scaling qualities as against quantities. It was used for the assessment of the agreement between fact and theoretical expectation, the counting of instances belonging to certain

categories or classes as distinct from comparison based on measurement. Furthermore, the author says "it must be emphasized at the outset, that it is delinquency that forms the more special subject of study, and that the neurotic is dealt with as serving as a contrast and therefore as a quasi control group". This is a basic issue, which might arouse criticism of the design of the enquiry. Dr. Bennett's classes of children are carefully defined, and on this basis there are no grounds for criticism But some clinicians might well complain that the overlap in childhood of neurotic and behaviour disorders is considerable, that delinquency is a medico-legal social category with many variants, particularly in the sexual field; that many behaviour manifestations are objectivizing or exteriorising of neurotic undertones, in the nature of 'acting out'. In view of the author's psycho-analytic orientation, it is surprising, that her material was not more closely examined under the Freudian microscope, and her very numerous case studies whet the appetite for greater detail, which, if given, might well swell the ranks of mixed clinical examples. Indeed the individual quality of each case prompts the hope, that this phenomenological material will encourage future workers to delve deeper than the author has so far done. Her numerous hypotheses agree substantially with psycho-analytic concepts, and the more surface characteristic differences between the delinquencies and the neurotic disorders seem to confirm what is generally known about familial and individual factors.

This is a serious study and a necessary marshalling-yard for future research workers, who will be encouraged to delve further into the origins of the delinquent and the neurotic trends in children. They will, one hopes, be encouraged to examine the extent to which phantasies underlie juvenile delinquency. The earlier the manifestation the more rich is the imaginal content, and the nearer to neurotic mechanisms. Under any circumstance a comparison with controls is imperative in any research claiming to confirm psycho-analytic concepts. For it is the latter discipline which has laid bare to us the common basic conflicts, which make not only for neurosis and socially anomalous conduct, but character patterns in general.

EMANUEL MILLER

J. child Psychol. Psychiat., 1961, pp. 229 to 241. Pergamon Press Ltd. Printed in Great Britain.

THE STRATEGIC DEPLOYMENT OF THE CHILD PSYCHIATRIST IN PREVENTIVE PSYCHIATRY*†

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VOL. 2 1961

INTRODUCTION

THE magnitude of the problem of mental illness is a matter of major public health concern in the United States. Beds for mental patients comprise some half of all hospital beds (U.S. Bureau of Census, 1960); the more conservative epidemiologic surveys indicate a prevalence rate of not less than 10 per cent for psychiatric morbidity in the general population (Pasamanick *et al.*, 1957). The number of trained psychiatrists currently available is grossly inadequate to meet the therapeutic challenge; the latest study indicates little likelihood of any substantial gain in this psychiatrist-patient ratio within the forseeable future (Albee, 1959). Even as we consider means to enhance recruitment and augment training facilities, it is essential that we examine the evidence for the effectiveness of current preventive and therapeutic methods in order to specify modes of deploying personnel that will bring the maximal return in community health.

This paper will report the results of a preliminary effort to essay this task for child psychiatry. It has been necessary to fit together an admixture of solid data, suggestive findings and extrapolations from findings in order to derive tentative proposals. But I would argue that such a course is justifiable in public health planning (Eisenberg and Gruenberg, 1961). It provides a probabilistic model for programming which is to be preferred to blind adherence to tradition; it can be modified as research makes available data of greater certainty.

PREVALENCE OF MENTAL DISORDER IN CHILDHOOD

At once we are confronted by problems of definition. Behaviour symptoms, according to Lapouse and Monk (1958), are widespread among children; the possibility suggests itself, at least for the less severe disorders, that the difference between the child who appears at the clinic and the one who does not may lie less in the child than in the threshold for discomfort, or in the diagnostic perception, of his parent or his teacher. Differences in the statistics reported by clinics serving presumably similar populations suggest that diagnostic practices vary widely between clinicians (Bahn *et al.*, 1961; Bahn, 1960). There is conflicting evidence in the literature as to whether teachers and mental health personnel identify the same (Mensh *et al.*, 1959; Bower, 1960) or different (Goldfarb, 1960) children as in need of care.

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It is of interest that a variety of surveys, each with methodologic limitations, reach 'agreement' upon a figure on the order of 10 ± 2 per cent as the proportion of disturbed public school children (Mensh *et al.*, 1959; Bower, 1960; Goldfarb, 1960; Abrahamsen, 1955; Ullman, 1952). This does not, however, warrant our accepting this median estimate as the basis for planning. It includes disorders of widely varying severity, some of which are of dubious significance and may not require therapeutic intervention; it does not discriminate among population groups with markedly unequal risks for psychopathology (by age, sex, social class, etc.).

If we ask, on the other hand, how many children are receiving service from existing out-patient psychiatric clinics, we obtain rates one order of magnitude lower. National data, based upon incomplete reporting (40 per cent) but adjusted to compensate for missing clinics, indicate rates for *psychiatric service* which are less than 0·5 per cent (Bahn and Norman, 1959). Essentially similar findings were obtained for a city (Baltimore) and a state (Maryland) with a more complete reporting system (Bahn *et al.*, 1961; Bahn, 1960). These tabulations do *not* include the disturbed children served by non-psychiatric facilities (school psychology services, family case work agencies, etc.). Even if we double the rates to allow for these paramedical services, the proportion of children receiving care for mental health problems appears to be well under one tenth of those estimated to be in need.

There is, however, evidence for differential patterns among particular population groups. Children in public foster care were referred at a rate ten times higher than the community rate when a consultation clinic was established for the Welfare Department (Eisenberg, 1961). The available evidence suggests that this reflects an unusually high psychiatric morbidity among this population, so that the disproportion between need and service remains marked (Eisenberg, 1961; Maas and Engler, 1959; Boehm, 1958). It is my impression, based upon limited but consistent data (Eisenberg *et al.*, 1960; Deutsch, 1960; Douglas and Bloomfield, 1958), that high rates are also to be found among children who, though living at what is euphemistically termed 'home', are in the lowest socio-economic quintile, particularly when they are also members of minority groups (Eisenberg, 1960*a*).

In the absence of solid prevalence data, we might take a conservative figure and cut the common estimate by half. We then confront a potential patient reservoir of 2,000,000—5 per cent of the 41,000,000 children of school age (Bernert, 1960). Contrast this with the some 250 physicians thus far certified (by 1961) as fully qualified child psychiatrists, and one obtains a measure of the inadequacy of current forces—1 certified child psychiatrist for 8000 or more psychiatrically ill children! Conventional methods of work by this group of specialists, even if we double their number, will not keep pace with the natural increment in this population; the 1,500,000 new children of school age estimated for each of the next five years (Bernert, 1960) can be expected to yield 75,000 additional patients on the assumption of a 5 per cent rate.

CONSEQUENCES IN ADULT LIFE

Perhaps it may be contended that psychiatric morbidity in childhood, though regrettable in itself, may be self-reparative and thus be of limited consequence for adult malfunction. Those with this point of view will be prepared to except the

chronic brain syndromes that produce irreversible impairment in intelligence and personality. But there is rather impressive evidence, acquired over the past decade, that child psychiatric disorders without known tissue pathology can lead to psychiatric disturbance in adult life. Clinical follow-up studies of autistic (Eisenberg, 1956), schizophrenic (Bender, 1953) and aggressive (Morris, 1956) children have indicated the persistence of life-long disability. A careful 30-year follow-up of former child guidance clinic patients, contrasted with a control group of academically adequate schoolmates, has demonstrated significantly higher rates of adult disability among the former child patients (O'Neal and Robins, 1958*a*). Particular clinical syndromes (O'Neal and Robins, 1958*a*), symptoms such as repeated runaways (O'Neal and Robins, 1959), and clusters of symptoms (O'Neal and Robins, 1958*b*) were shown to have significance in predicting adult psychopathology.

PREVENTIVE AND THERAPEUTIC MEASURES

Perhaps I have succeeded in convincing you, if convincing was necessary, that at least certain categories of neuropsychiatric disorder in childhood have implications for future as well as present disability. To what extent, it may now be asked, is there proof that preventive or therapeutic measures can modify the natural history of these disorders? I shall summarize the evidence in relation to specific clinical problems and therapeutic methods.

VOL. 2 1961

(1) Certain metabolic disorders, most notably cretinism (Smith *et al.*, 1957), galactosaemia (Donnell *et al.*, 1960) and phenylketonuria (Bickel *et al.*, 1954), can be identified in infancy or even anticipated by detecting disease in siblings or carrier states in parents (Donnell *et al.*, 1959; Hsia *et al.*, 1957) and treated medically so as to prevent CNS deterioration in part or in whole. They provide paradigms for control programmes to be extended to other biochemical anomalies (Eisenberg, 1957*a*), toxic and infectious disorders (Eisenberg and Gruenberg, 1961).

(2) Pasamanick and his co-workers have identified a "continuum of reproductive casualty" in the form of brain pathology associated with complications of pregnancy and parturition (Lilienfeld and Parkhurst, 1951; Lilienfeld and Pasamanick, 1955; Pasamanick and Lilienfeld, 1955; Knobloch *et al.*, 1956; Rogers *et al.*, 1955; Kawi and Pasamanick, 1959; Knobloch and Pasamanick, 1959). These complications occur at disproportionate rates among the socioeconomically under-privileged (Rider *et al.*, 1955; Hepner, 1958; Wortis and Freedman, 1959). Presumptively, better pre-natal medical care, nutritional supplementation and improved living conditions for these population groups can be expected to reduce this source of impaired brain function (Eisenberg, 1960*a*).

(3) The vast literature on the intellectual and emotional consequences of *deprivation in infancy and childhood*, reviewed recently by a number of workers (Bowlby, 1951; Glaser and Eisenberg, 1956; Yarrow, in press; Bowlby *et al.*, 1956; Pinneau, 1955), indicates a potential for major damage to children so reared, though it is not yet clear whether the sequelae can (Clarke and Clarke, 1960; Richmond, 1959) or cannot (Goldfarb, 1955) be reversed. Studies on children in public foster care (Eisenberg, 1961; Maas and Engler, 1959) suggest the alarming possibility that these programmes, owing to inadequacies which stem from meagre budgets, anachronistic concepts, and lack of community support, may in fact be adding to this

reservoir of psychopathology rather than diminishing it. I have already called attention to the likelihood that under-privileged children are a group at risk for neuropsychiatric difficulty, both at organic and psychogenic levels (Pasamanick *et al.*, 1956; Wortis *et al.*, 1961). With some 270,000 children in foster care (Maas and Engler, 1959) and 2,250,000 supported by Aid to Dependent Children programmes in marginal families (Wiltse, 1960), we confront a population of 2½ million children who face major mental hazards consequent upon deprivation.

Here, then, is perhaps the most important area for primary prevention. There is clear indication, on the one hand, for more vigorous measures to sustain and rehabilitate the family when it can be preserved for the child and, on the other, for better services when the child must be removed from a disintegrating family. For the preservation of family life, such measures as unemployment compensation and welfare benefits at levels to enable parents to maintain dignity; casework services to help families to reorganize; vocational training to upgrade parental work capacities; remedial schooling and recreational supervision for children; all are needed. For children whose families cannot be saved, effective planning for care away from home is only possible with a wide spectrum of differentiated placement facilities: foster homes, small group homes, properly staffed institutions. The justification for these proposals is rooted in grim clinical experience; we have seen what happens to children when they do not receive adequate care. A substantial proportion of our professional efforts must be devoted to working for the realization of comprehensive social welfare programmes; our knowledge of child development leads to the confident expectation that better child care services can produce a significant reduction in the morbidity of a population who contribute disproportionately to institutions for the defective (Sarason and Gladwin, 1958), the delinquent (U.S. Dept. of Health, Education and Welfare, 1960), and the disturbed (Bloch and Behrens, 1959).

Moreover, there is evidence that the intellectual consequences of deprivation are at least partially reversible. A number of studies on children moved from institutional to group or foster settings have demonstrated gains in intelligence test performance and social productiveness (Clarke and Clarke, 1960; Richmond, 1959; Skeels *et al.*, 1938; Clarke and Clarke, 1958; Lyle, 1959). This adds further impetus to the emphasis on social planning for secondary as well as for primary prevention.

(4) Thus far, we have identified areas in physiologic and social psychiatry in which reasonably solid evidence for preventive and therapeutic efficacy is to be found. Let us now turn to the data bearing on the *effectiveness of psychotherapy*, an activity which preempts a major portion of the working time of many psychiatrists and which is accorded high prestige as a preferred professional activity.

At once, we confront a paradox. The quite extraordinary potency of psychologic influences in modifying human behaviour at physiological as well as psychological levels has been extensively documented in the experimental and clinical literature; yet proof of the superiority of one treatment method over another, or even of prolonged over brief therapy, has been remarkably elusive (Frank, 1961).

Levitt (1959), in a careful comparison of pediatric patients after psychotherapy with a group who had declined the offer of treatment, was unable to detect statistically reliable differences. A review by the same author (1957) of the published studies on

psychotherapy with children led him to conclude that specific benefit had not been demonstrated; this conclusion has been disputed in a different (and somewhat strained) interpretation of the same reports (Heinicke and Goldman, 1960). Common defects exist in most therapeutic studies (Eisenberg, 1960*b*). Little or no effort to separate diagnostic groups is made (Eisenberg, 1959*b*); insufficient consideration is given to the therapeutic impact of the 'diagnostic process', itself often equivalent in time to short-term treatment (G.A.P., 1957); self-selected drop-outs may indeed differ significantly from patients who remain in treatment, although Levitt found that experienced clinicians were unable to distinguish them on the basis of intake records (1958).

RECENT EXPERIMENTAL STUDIES

A number of these issues have been explored in studies undertaken at the Children's Psychiatric Service. In the first study (Eisenberg *et al.*, 1958), we determined the subsequent adjustment of foster children who had been referred for psychiatric evaluation because of behaviour problems. On the basis of history, psychological testing and clinical examination, psychiatric recommendations were offered to the case workers who were responsible for the care of the children; no further psychiatric treatment was provided. Levels of social function were determined from case records at an average interval of one year later. Specific note was taken of whether the plan proposed at the diagnostic conference had been carried out. Table 1 contrasts the outcome in these cases in which recommendations were followed with those in which they were not.

VOL. 2 1961

TABLE 1. FOSTER CARE CONSULTATION CLINIC

	Improved	Unimproved	Total
Plan followed	24	3	27
Plan not followed	3	8	11
Total	27	11	38

The difference between groups is statistically significant ($P=0{\cdot}001$).

It is necessary, however, to add a word of caution. We could not be certain that the same effort to follow through had been made for all children. Might the case workers have selected the more promising children for their major efforts? This did *not* seem to be the case, and was denied by agency supervisors. The variability in executing recommendations appeared to have been a matter of the vicissitudes of practice in an understaffed and overworked agency (Eisenberg, 1958*a*). We seem, therefore, to have evidence that psychiatric guidance of social casework for disturbed children can lead to improvement in outcome.

In a series of psychopharmacological investigations (Cytryn *et al.*, 1960; Eisenberg *et al.*, 1961*a*, *b*) we have obtained rather conclusive evidence that the clinical response to short-term psychotherapy (with or without placebo administration)

varies in relation to diagnostic category. We were unable to detect any benefit ascribable to meprobamate, prochlorperazine or perphenazine beyond that produced by placebo. Table 2, which summarizes the results of three therapeutic studies, contrasts the outcome of neurotic and hyperkinetic children after 4 psychotherapeutic interviews distributed over a 7-week period.

TABLE 2. RESULTS OF BRIEF TREATMENT

	Significant improvement	Mild or no improvement	Total
Neurotic patients	48	23	71
Hyperkinetic patients	37	96	133
Total	85	119	204

$\chi^2 = 30{\cdot}15$; $P < 0{\cdot}001$

This difference could be expected to arise on the basis of chance alone less than once in one thousand trials.

We had no untreated control group, so that we cannot state how much of this effect is due to the therapy. We can, however, conclude that the clinical course of the two groups of patients after brief psychotherapeutic intervention follows significantly different patterns. It is noteworthy that the improvement rate for the neurotic children compares favourably with that reported after far longer psychotherapeutic programmes (Levitt, 1957). Both 6-month (Cytryn *et al.*, 1960) and 2-year (Gilbert and Eisenberg, 1959) follow-up studies on the original group of patients revealed that this difference in clinical outcome persisted and that the neurotic patients sustained their improvement.

Related to these findings have been several investigations of a specific neurotic syndrome: school phobia (Eisenberg, 1958*b*). We employed a direct and relatively brief psychotherapeutic programme, the central feature of which was a major emphasis on prompt return to school, by coercion if necessary. The therapeutic results are summarized in Table 3 (Eisenberg, 1959*a*).

TABLE 3. THERAPEUTIC RESULTS IN SCHOOL PHOBIA

	Success	Failure	Total
Less than 11 years old	39	5	44
11 years and older	9	14	23
Total	48	19	67

$\chi^2 = 15{\cdot}87$; $P < 0{\cdot}001$

The sharp distinction in outcome related to age has been noted by others (Coolidge *et al.*, 1959) and implies a difference in the extent of the psychopathology. Clinical experience with inadequately managed school phobia (Eisenberg, 1958*b*; Waldfogel *et al*, 1959), in which chronic or recurrent invalidism has been observed, provides some justification for a belief in the value of the therapeutic programme as an important factor in producing the high success rate (72 per cent overall, 88 per cent with the elementary school group); final proof must await a controlled study.

It is characteristic of cases of school phobia that relatively few remain in treatment after successful return to school has been accomplished. A follow-up study then affords some measure of the effect of relatively brief therapy. My associates and I (Rodriguez *et al.*, 1959) reviewed 41 successive clinic admissions for school phobia; the average duration of the follow-up period was 3 years. Table 4 summarizes the results.

TABLE 4. THERAPEUTIC RESULTS IN SCHOOL PHOBIA: THREE YEARS AFTER BRIEF TREATMENT

	Regular school attendance	Unable to attend regularly	Total
Less than 11 years old	24	3	27
11 years and older	5	9	14
Total	29	12	41

$\chi^2 = 10{\cdot}21$; $P < 0{\cdot}01$

VOL. 2 1961

None of the 29 children who were attending school regularly had substituted phobic symptoms in another area; 3 exhibited aggressive behaviour and 3 academic problems (2 of whom had I.Q.s of less than 90). Once again, we have identified a neurotic syndrome in which brief treatment is associated with quite respectable improvement rates that appear to be enduring.

In our most recent study (Molling *et al.*, 1961), we evaluated the effect of a drug (perphenazine) upon the intra-institutional behaviour of a group of committed delinquent boys. House parents in the two study cottages tabulated at weekly intervals the total number of symptoms exhibited by each child as well as the severity of each symptom on a 3-point scale. The mean number of symptoms (total symptoms/number of subjects = 'mean symptoms' in Table 5) and the mean score obtained by weighting the symptoms for severity (total symptoms × severity of each symptom/number of subjects = 'symptom severity' in Table 5) were contrasted by subtracting initial from final scores. (A negative sign indicates a decline from baseline scores, a positive sign an increase.) As Table 5 demonstrates, subjects who received the drug or its matched placebo showed a significant decline during the experimental period in the number and severity of symptoms, whereas the untreated control group underwent an excerbation.

The drug and placebo groups behaved alike; both differed significantly from the control group. The outcome cannot be ascribed to specific pharmacological action; it appeared to be related to the positive expectancies aroused in the delinquents

TABLE 5. ANALYSIS OF DIFFERENCE SCORES DURING THE EXPERIMENTAL PERIOD

Group	*N*	Mean symptoms	*F*	*P*
Perphenazine	13	—11·77		
Placebo	13	—12·77	58·45	0·001
Untreated	27	+ 2·85		
Group	*N*	Symptom severity	*F*	*P*
Perphenazine	13	—19·31		
Placebo	13	—21·23	42·97	0·001
Untreated	27	+11·41		

and in the caretaking personnel. This affirms for delinquents a finding by now quite familiar for psychotic patients in state hospitals; the enthusiasm surrounding the introduction of a new therapeutic agent in an understaffed and under-stimulated institution is in itself therapeutic. Here, then, is still another sphere in which the psychiatrist can help to modify behaviour for the better by planned use of psychological methods.

I have elsewhere (1957*b*) reviewed the literature on the treatment of psychosis in childhood; there is as yet no convincing evidence that available treatment methods are effective. This is not equivalent to a statement that they are without effect but rather that proof of efficacy has yet to be provided. The same statement must be made with respect to the out-patient treatment of sociopathic disorders (Powers and Witmer, 1951).

IMPLICATIONS FOR THE PRACTICE OF CHILD PSYCHIATRY

These data from psychotherapeutic studies are far from completely satisfying. Much more remains to be done in pursuing the tentative leads they provide. But, as an epitome of currently available information, they do have public health implications. They suggest that (a) diagnostic study and therapeutic guidance enables the psychiatrist to enhance the effectiveness of other mental health personnel in their work with disturbed children; (b) brief psychotherapy may be no less effective than intensive treatment for neurotic disorders in childhood; and (c) the introduction of psychiatrically supervised treatment programmes into the institutional milieu may help to control the behaviour of delinquents. Each of these propositions identifies an area and a method of work which would enable the child psychiatrist to reach many more patients than is possible if he limits himself to long-term individual psychotherapy.

Indeed, I cannot forbear to comment on the rather curious implicit value system of many contemporary practitioners of psychotherapy. Certain terms have become fetishes. The adjectives 'individual', 'long-term', 'intensive' and 'dynamic' (in the narrow sense of psychoanalytic) appear to confer singular virtues on the noun 'therapy', if we are to judge from the frequency of their (frequently undefined) use and the reverence they arouse. This remarkable state of affairs exists in the complete

absence of any convincing demonstration of the greater effectiveness of 'long-term' 'intensive' psychotherapy in the several decades of its vogue. This mode of treatment, in the private practice of psychiatry, is available only to the relatively affluent. In public clinics, it is accepted, even when proffered, by no more than a minority of patients (Tuckman and Lavell, 1959); were it to be pursued exclusively, it would have the effect, in short order, of closing clinic doors to further intake. Rarely is it a part of investigative programmes, for which it might quite properly be employed. The time has come, I am convinced, for an assault on the myth of its superiority if we are to develop an effective mental health programme. When the emperor's invisible clothes are indeed no clothes at all, it ill becomes us to weave garments from the same cloth for the populace at large!

CONCLUSIONS

(1) The size of the problem of mental illness precludes reliance on conventional methods of individual treatment after disease has become fully manifest. Effective methods for control require the mobilization of forces for prevention. The focus must be at the community level; by identifying populations at risk and by providing specific protection. With no illusions that more than partial solutions for particular syndromes are available, we can proceed to the attack where we have weapons of at least presumptive potency.

VOL. 2 1961

(2) Neuropsychiatric disorder is generated in the slums of the city. Growing urban blight, if unchecked, threatens an inundation of psychopathology. Central nervous system impairment in the fetus follows upon the malnutrition, inadequate prenatal care, and life stress to which the pregnant mother in the marginal family is subject. Once born, the brain of the infant may be further victimized by poor control of infections, injury and toxins. Even if he escapes these hazards, the child receives less intellectual stimulation and is particularly vulnerable to deprivation in the event of family disintegration.

The child psychiatrist can make a major contribution to mental health by helping to mobilize the community in support of social welfare programmes to minimize the sequelae of poverty.

(3) The reversibility, at initial stages, of certain metabolic, infectious and toxic insults to the CNS establishes a clear priority for programmes for the early identification and prompt treatment of these disorders.

(4) The school system, with its captive population, provides an unique opportunity for screening techniques, some of which have been shown to detect disturbed children. The suggestive evidence for the value of psychiatric consultation and of short-term therapy recommend these procedures to us as methods for reaching a larger proportion of patients at earlier stages of illness.

(5) At the same time we must recognize the clear limitations of present knowledge and of current methods of diagnosis and treatment. A heavier investment of psychiatric personnel in research is an urgent need of the present if we are to acquire new skills. It would be an unwise plan, indeed, that emphasized application to the exclusion of investigation, even though we work with limited forces and are confronted with an imperative to relieve suffering.

(6) It may be contended that these are idle proposals for a democratic society,

since we possess no means to compel a redistribution of personnel, even if we are convinced that such is desirable. But this ignores the fact that current modes of practice have evolved historically in response to shifting motivations and rewards. By the creation of suitable public health models for trainees, by the intellectual and humanitarian challenge inherent in unsolved community mental health problems, by the combatting of uncritical attitudes toward present accomplishment, we can change the intellectual atmosphere of our profession to one which will attract our fellows into the areas of need.

As scientists, we bear a heavy responsibility in our society. If it is to realize its promise, it demands of us that we stand up to its challenge. I am convinced that we shall.

SUMMARY

A review of the epidemiologic and experimental evidence currently available, concerning specific mental disorders in childhood, leads to the identification of preventive measures which, if applied on a broad scale, could produce a significant reduction in the incidence and prevalence of mental illness. The measures proposed require (a) a shift in the methods and patterns of psychiatric practice heretofor emphasized and (b) a vigorous campaign by mental health specialists for social action to correct morbid environmental factors.

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VOL. 2 1961

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VOL.
2
1961

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THE INFANT'S FEAR OF STRANGERS AND THE FLIGHT RESPONSE

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INTRODUCTION

RENÉ SPITZ has probably done more to stimulate work on the interpersonal aspects of the first year than any other worker. In a recently published series of lectures (1959) he has capped many years of thought and observation with his current theoretical outlook on the events of the first year.

In these talks Spitz transferred Spemann's (1938) concept of embryological organizers to psychological development, and mentioned three major psychological organizers in the first 18 months of life. They are the *smile*, which develops by the third month, "8-month's anxiety" (fear of strangers in the second half-year of life), and the beginning use of verbal symbols at approximately 18 months of age. It is perhaps extraordinary that the first two phenomena to which Spitz ascribed such psychological importance, although familiar events, have been given but little theoretical attention elsewhere.

The present paper is primarily concerned with the second organizer, the so-called 8-month's anxiety. Other than Spitz, only Székely (1954) has discussed this topic in any detail, and the present paper may be considered an extension of Székely's theme that the infant's fear of strangers is related to the flight response of lower animals. While Spitz's (1955) criticism of that article applies, in part, to this one as well, I suggest that the reader make up his own mind after studying the three articles. Otherwise we would become involved in a refutation of a refutation.

The writer's concern with this problem stems from an ongoing study of personality development in infants, and all personal observations reported here have been made in the course of that study (Department of Mental Hygiene, State of California, Project R-59-1-17).

THE DEVELOPMENT OF THE SMILE

At a very early age the infant will follow moving persons with his eyes. I have observed this as early as two days after birth, and Nancy Bayley (1961) has found that 65·5 per cent do so by one month of age ($N>100$). During the first $1\frac{1}{2}$ months the smile may appear following a variety of non-visual stimuli, such as stimulation of the corner of the mouth, the sound of a bell, or occasionally in the absence of a clearcut stimulus.

During the second month the infant fixes his eyes on the mother's face at every opportunity: this is seen most clearly during feeding. Fantz (1961) has demonstrated experimentally that infants at this age prefer looking at a replica of a face, and spend far less time viewing various other stimuli. Soon afterwards the smile appears quite regularly whenever the infant is confronted by the human face.

The biological nature of the smile has been demonstrated by the well-known experiments of Kaila (1932) and Spitz (1946). Spitz has shown that smiling, from approximately 2½–4 months of age, may be elicited as readily by models of the human face as by the face itself. By using various masks he found that the smile is actually elicted by a configuration of two eyes, a forehead, and motion such as nodding or mouth movement. However, the fact that some congenitally blind infants smile (Thompson, 1941) indicates that the phenomenon is still incompletely understood.

As for the biological *function* of smiling, it is important to consider that the human infant cannot cling as do other primates, nor can it follow the parent as do some birds and lower mammals. Vision, then, is the major mode of contact in the first half year of life, and the smile, in turn, appears to be the major means by which parent-child rapport is established. In this regard, Goldstein (1957) has made the significant observation that the smile is the means, for both infants and adults, whereby two individuals may experience 'oneness', i.e., where separateness is at once acknowledged and overcome.

VOL. 2 1961

While smiling in the first half year is of great interest and deserves extended discussion, we are here concerned with the gradual transformation of the smile after the fifth month from a universal response to all human faces to one reserved only for familiar persons.

THE CHANGE FROM UNIVERSAL SMILING TO WARINESS OF STRANGERS

After 5 months the child becomes more discriminating with his smile, and he usually begins to show preference for persons with whom he has daily contact. Very soon afterwards most infants will look warily at strangers, and some will turn and cry. Spock (1955) describes the phenomenon as follows:

> "A 2-month-old baby doesn't pay much attention to his doctor. As he lies on the examining table he keeps looking over his shoulder at his mother. The 3-month-old is the doctor's delight. He will break into a body-wiggling smile and make noises at him. By about 5 months a baby is apt to have changed his mind. When a stranger approaches, he stops his kicking and cooing. His body freezes and he eyes him intently, suspiciously, maybe for 10 or 20 seconds. Then his stomach begins to rise and fall rapidly. Finally his chin puckers and he begins to shriek. He may get so worked up that he cries long after the examination is over. This is a sensitive period, when a baby may take alarm at anything unfamiliar such as a visitor's hat, or even his father's face (p. 143)."

Whereas Spock records 5 months as the average age of onset in the office, in my observations, all made within the homes, comparable phenomena occur most often between 7 and 10 months, if they occur at all. This discrepancy is readily reconcilable, for the mothers in our study point out that fear of strangers is more likely or more pronounced when the total situation is strange.

Another variable seems to be the relative exclusiveness or intensity of the mother-infant relationship. Spitz (1946) found unusually early discriminations between face and mask in infants with strong parental attachments, and, similarly, our preliminary impression is that such infants may exhibit fear of strangers earlier than the average. Other infants with strong parental attachments become fearful at the normal time, but more extremely than the average. Finally, in large families, where the mother attends the infant minimally and where a number of people come and go,

he may show only mild wariness of strangers, or none at all. It should be noted that these impressions may require revision as we obtain additional data.

ATTEMPTS TO EXPLAIN FEAR OF STRANGERS

The first serious attempt at a functional explanation of the infant's fear of strangers was by Spitz (1950). He noted that experiments on memory in infancy make it clear that memory traces do not play an important role before the second half of the first year. (Although he did not identify the experiments he probably referred to the work of Piaget (1929).) After this age, says Spitz, ". . . the child confronts the stranger's face with the memory trace of the libidinal object. On finding that the stranger is not the object, the child concludes: 'This is not mother, she does not return, I have lost mother.' The stranger's face thus becomes the cue for the apperception of a rising tension between id-demands and inadequate ego-strength (pp. 142–143.)" Spitz has named this penomenon the "8-month's anxiety", for 'anxiety' implies a subjective source of pain; 'fear', by contrast, implies an external source of pain.

The term 8-month's anxiety is unclear for two reasons: since the reaction in question may occur at any age between 5 and 12 months, 8-month's is misleading. More important, however, is that 'anxiety' brings with it surplus meaning that is probably inaccurate as applied to the present phenomenon.

As Spitz (1950) himself observed, an infant of 8 months may continue to express his fright of strangers while in his mother's arms. He may, for example, bury his head in mother's bosom and refuse to come up for a second look. It seems improbable that this baby declares to himself (in effect) "Mother has abandoned me." Furthermore, fear of strangers may persist into the second year, when the child has matured considerably. He may continue to show his fearfulness with both mother and stranger simultaneously in view, and one commonly sees such a child frantically crawl or toddle from the stranger towards someone familiar.

Bridges (1932) described much the same phenomena, and Escalona's (1953) observations are similar to those of Bridges and my own:

> "Given a child who reacts to strangers, this effect (fear) will be observable only if the stranger comes very close in small babies. They don't care if the stranger is some distance away, but if he comes close enough, they react. A little later, say between 8 and 11 months, it may be all right if the visitor sits across the room, but distressing to the baby if he comes closer than four or five feet. During the second year, just an appearance at the other end of the room may be enough to upset the shy baby (p. 53)."

While I agree with Spitz (see above) that the mother-infant relationship is important in determining the infant's reactions to strangers, Spitz neglected the obvious in this early article. It is an undeniable fact that *the stranger* qua *stranger is perceived as dangerous*. Nor is this an unique conclusion. Jersild (1954) has noted that the first fears of human infancy are spontaneous in the sense that avoidance is not built-up by association with a more primitive fear, and Hebb (1946) has reported similar experimental findings with chimpanzees. In a recent personal communication Spitz has agreed that two factors are probably involved here, an innate phylogenetically inherited one and one which is firmly connected with object relations.

Székely (1954) makes much the same point as is made here regarding the infant's

fear of strangers. In addition, he speculates that the Gestalt configuration which 'releases' the smile, i.e., two eyes, a forehead, and motion, may also 'release' the fear response.

While it is true that the infant may vigilantly watch a stranger's face until his fear subsides, in our experience a model of a face will not usually draw such a response, nor will fear subside in older infants when the stranger's face is averted. Also, some sensitive infants may stiffen initially to a stranger's voice, before catching sight of him. It appears to me that the older infant stares only when he is ambivalent, i.e., when he is not sufficiently frightened to cry or flee nor sufficiently attracted to smile. We therefore reject this notion of Székely's and turn, instead, to studies of animals for a fuller understanding of this phenomenon.

DEVELOPMENT OF THE FLIGHT RESPONSE IN BIRDS AND MAMMALS

Thorpe (1950) has pointed out that soon after birth birds make contacts with parents and siblings; afterwards a bird tends to take avoiding or self-protective action in response to (a) a wide range of stimuli likely to be signals for danger, especially any moving objects, (b) any stimulus or situation which is strange, and (c) any stimulus at an unusual intensity.

VOL. 2 1961

Some birds, such as the curlew, will flee from strange species immediately upon hatching (Lorenz, 1958). In addition, many birds appear to have a built-in readiness to flee from certain definite visual configurations, e.g., certain species of chicks will flee the silhouette of a hawk (Hartley, 1950). On the other hand, mallard ducks must *learn* from whom to flee. Before about 24 hr of age they will follow any moving object, living or inanimate, and this may develop into a strong if not permanent attachment. After 24 hr of age, the same moving objects suddenly begin to elicit a flight response in those birds which have not contacted them previously. Similar data have been reported in many other species of precocial (early maturing) birds (Hess, 1959).

It is clear that the flight response is the result of some maturational process, but we have yet to discover the physical correlates of this behaviour. In one study, Hess (1959) attempted to circumvent the flight response of mallards by feeding them tranquillizers at the time the flight response normally sets in. This was to no avail, for when the effect of the drug wore off the flight response appeared as usual.

In a recent experiment Freedman, King, and Elliot (1961) found a general flight pattern in dogs similar to that of mallards, although far longer periods of time were involved. In this study litters of puppies were isolated with the bitch in fenced acre fields from 2 to 14 weeks of age. They were removed indoors at different ages, played with for a week, and returned to the field. The pups manifested an increasing tendency to withdraw from human beings after 5 weeks of age and, unless contact with humans occurred before 14 weeks of age, withdrawal reactions became so intense that normal relationships could not be established thereafter.

While the foregoing seems to be the only experimental study of flight in mammals, it is common knowledge that *early* capture of wild mammals is most effective for taming them. Seton (1953), the naturalist, reports that only when there is early contact with man will a deer approach man in later life rather than flee from him. He notes that actual attacks on men made during the rutting season occur only by

deer raised on deer-farms. Seton reports on several other species of mammals in which the flight response is ameliorated by early contacts, and observations of primates follow the same trend (Palmer, 1961).

The most thoroughgoing studies of flight in mammals are those of Hediger (1951, 1955). He compiled flight-distance statistics which indicate that each species has a characteristic flight distance and a characteristic flight reaction under normal circumstances, and that learning can affect flight distance. Unfortunately, Hediger was not concerned with the problem of how the flight response develops.

It is of particular interest for the present thesis that the flight response in many species is dependent upon successful attachments made earlier. Domestic chicks (Collias, 1950), dogs (Melzack, 1954), and monkeys (Palmer, 1961) raised in isolation show no clear-cut flight response later, and they also show abnormal behaviour in all their contacts. Such evidence supports Spitz's (1959) contention that the preceding organizer must be successful (formation of primary relationships) for subsequent organization (flight from strangers) to proceed properly. It is also in keeping with our impressions reported above, that infants with intense parental relationships exhibit greater fear than average, and those who have had relatively little contact with parents exhibit little or no fear of strangers.

It should be added that varying prior experiences are not the only causes of variation in the flight response. Scott's (1957) study comparing the flight reaction of basenjis (African barkless dog) and cocker spaniels points to a genetic basis for intra-specific differences in the intensity of flight reactions.

In general, very few undomesticated species have been observed which do not normally exhibit flight; for that matter, it is difficult to conceive of an environment so beneficent as to make survival possible without the benefit of a flight response or some substitute mechanism, such as armouring or the ability to poison attackers. As to the survival value of being able to learn who your friends are during a critical period, as opposed to being born with an endogenous knowledge of friends and enemies, one need only remark on the obvious: the importance of learning seems to increase as we rise in the phylogenetic scale, and seems to lend an animal greater overall adaptability.

CONCLUSION

The point of the present article is by now obvious. It is our view that the infant's fear of strangers is the homologue of the flight response which is found in the great majority of animal species. In *Homo sapiens*, as in other mammals with prolonged infancy, the response to strangers is greatly dependent upon the vicissitudes of the environment. However, flight appears in clearly recognizable form with sufficient regularity to indicate it as part of their innate structure. Thus, when Hediger speaks of flight-distance in animals, and when Escalona describes the intensification of fear with decreasing distance between infant and stranger, both are describing the same phenomenon.

Many questions remain unanswered, but extended discussion is bound to be speculative because we lack experimental work. We may ask, for example, are there factors other than conditioning that enter into the very young infant's greater attraction to adults as opposed to children and animals? Why do strange adults, in

the second half year, produce a greater reaction of fear than do strange children? What of the infant's responses to other species? Finally, what is the relationship between fear of strangers and 'separation anxiety'?

SUMMARY

The infant under 5 months usually smiles at any human face (or model of a face) that arrests its attention if two eyes, a forehead, and some sort of movement are visible. As he grows older, he becomes increasingly discriminating, and smiles are increasingly reserved for familiar persons. Discrimination turns to wariness sometimes in the third or fourth tri-mester of the first year, and he may begin to react with intense fear when confronted with a stranger. This response to strangers was compared with the flight-response found in lower species, and the hypothesis was proposed that these are homologous phenomena.

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VOL. 2 1961

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CONCEPTS OF NUMBER OF THE MENTALLY SUBNORMAL STUDIED BY PIAGET'S METHOD

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VOL. 2 1961

INTRODUCTION

THE THEORY developed by Piaget from his studies of children's concepts has certain distinctive features which make it a particularly fruitful approach to the study of the intellectually subnormal. Piaget's concern is with the process of intellectual development and not with the mere fact of the appearance of an item of behaviour, nor primarily with the age at which it occurs. His main conclusion is that this process is an intelligible sequence of stages. A theory which stresses the order in which developmental steps appear rather than the age at which they develop is immediately applicable to any group, however slow the rate of development; the complications arising from age comparisons of extremely deviant with normal populations are avoided.

An interest in the process has led Piaget to investigate the type of thinking that produces the result, when a child tackles a problem, instead of merely recording the fact of success or failure alone. For this purpose he has devised ingenious techniques which have brought to light new facts about the thinking of normal children; they may be equally illuminating in the case of the subnormal.

The main stages in the sequence (Piaget, 1950) are briefly as follows: (1) The sensori-motor (from birth to about 1½ years); (2) The pre-operational, subdivided into the pre-conceptual to about 4 years and the intuitive to about 7 years; (3) The stage of concrete operations (from about 7–11 years); (4) The stage of abstract operations (from about 11 years onwards).

Factors influencing the rate of development through this sequence (Piaget, 1950) are maturation, the child's own activities with objects and social interactions with adults; an equilibrium factor is also regarded as highly important (Piaget, 1960). Varying social and cultural environments are likely to produce age differences (Piaget, 1960).

An earlier study of severely subnormal children by the writer (1959) was based on Piaget's theory of sensori-motor development. This has now been followed by a study of concepts of number which, according to Piaget, involve either intuitive or concrete operational thinking. His conception of intuitive thinking is that it is dominated by the immediate perceptual situation and does not take account of successive changes in time or space, nor of inter-relations between two factors. Reliance on perceptual appearances leads to incorrect inferences though it may also, in a trial and error manner, result in success with a problem in which the elements can be matched or compared. During the period of concrete operations, the child's thinking is freed from the influence of misleading perceptual appearances, and he

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draws correct inferences about concrete material, though not if the same problem is given only in verbal form.

Studies of children's concepts of number based on Piaget's approach have been made by other investigators, though not all have followed his method closely so that lack of agreement with his findings does not necessarily refute them. The types of thinking that Piaget observed have, however, been found in groups of English children (Beard, 1957; Carpenter, 1955; Churchill, 1958), and in European, Indian, Arab and Somali children living in Aden (Hyde, 1959). Hyde also found trends with age within each community which supported Piaget's postulated sequence of the development of number concepts though, using only a one-trial presentation of each problem, some children showed intuitive thinking for some problems and concrete operational thinking for others. Variations in different socio-economic groups were found by Hyde (1959) and Beard (1957), and Churchill's (1958) results indicated that appropriate classroom experiences influence the earlier development of operational number concepts.

In the present study, four of the experiments on concepts of number described by Piaget (1952) were repeated, with the following hypotheses:

(1) That the types of thinking in relation to concepts of number observed by Piaget in normal children will be found in subnormal subjects.

(2) That subnormal subjects will show the same type of thinking for all number problems.

Three of the experiments on concepts of space described by Piaget and Inhelder (1956) have also been carried out with the same subjects. These data will be presented in a future publication, and will be related to the present results on number concepts.

SUBJECTS AND METHOD: GENERAL

The I.Q. range of the subjects of the present study was restricted in order to exclude individuals who might be at the most advanced of Piaget's stages, that of abstract operations. An examination of the consistency of concrete operational thinking in such subjects would be a spurious test of the second hypothesis.

The subjects were 50 adults and 44 children. All the adults and 12 of the children lived in hostels; the rest resided in the main hospital. The median age of the adults (22 males and 28 females) was 19 years ($Q=2{\cdot}25$). Full-scale I.Q.'s on the Wechsler Adult Intelligence Scale (WAIS) of 28 of them ranged from 44 to 73 (Median = 49·5, $Q=5$). Six without adequate speech had performance I.Q.'s (WAIS) from under 44–51; the remaining 16, who fell below the lower limit of the WAIS, had been given the Revised Stanford-Binet Scale, with a median I.Q. of 32 ($Q=4{\cdot}75$).

Few children under the age of 11 years could understand any of the problems. The present group of 25 boys and 19 girls had a median age of 12·9 years ($Q=1{\cdot}4$). The Revised Stanford-Binet I.Q. of 43 of them ranged from 25 to 55 (Median = 34, $Q=6$); (one child with little speech had a performance I.Q. of under 44 on the Wechsler Intelligence Scale for children).

Only four of the adults had had any formal education, but most had attended training centres for the severely subnormal. Apart from one child who had attended school for one year, all the children had been in-patients at the Fountain Hospital from an early age (under 5 years) and attended the hospital training centre.

The details of method are given for each experiment as it is dealt with. In general, Piaget's method was followed as closely as possible. This means that the subject was presented with repeated instances of the situation, from which he might draw inferences. This procedure is different from that of investigators who follow Piaget in the type of problem presented, but merely give one trial. Pilot trials were carried out in order to find a method of administration that was suited to the limited verbal ability of the subjects. Even so, some experiments were not understood by some younger children and adults with very low I.Q.'s.

(Details of these methods of administration are available on request.)

Responses were classified in terms of Piaget's stages, using his criteria. Subjects who moved from a lower stage to a higher one during the course of several trials have been classified by the higher stage, provided they showed it again on at least the following trial.

EXPERIMENT 1

One-to-one correspondence and equivalence of corresponding sets

VOL. 2 1961

Method. This experiment was designed to investigate the child's ability to make a one-to-one correspondence between two sets of objects and to study his belief in the numerical equivalence of the two sets when the correspondence is destroyed. In the present experiment the subject was required to pair with yellow counters a row of 10 and a circle of 12 blue counters, followed by other configurations in cases of doubt. The experimenter spread further apart the row of blue counters and asked the subject whether there were still as many counters in each row, or more in one. A reason for the statement made was requested. The counters were repeatedly placed opposite again, and spread out, and the same questions asked, with the order varied.

Results. Piaget classified responses into three stages as follows, the third involving concrete operational thinking:

I. Inability to make a one-to-one correspondence: the child makes a row of the same length.

II. The child makes the one-to-one correspondence but denies the equivalence of the two sets when the elements are not opposite one another.

III. The child affirms that the sets are equivalent, regardless of the spatial arrangements of the elements, and gives their previous correspondence as a reason.

Two subjects who made only one or two errors were classified as transitional between Stages I and II and 6 subjects were classified as transitional between Stages II and III. These stated at first that the number of counters remained the same, but became uncertain when questioned; none could give a reason for their belief and some had to count in order to make sure. The rest were placed in the three categories. Three subjects who succeeded in making the correspondence only after some practice and then reliably did so have been classified as Stage II. Although some of the Stage II subjects said "It's more where it's long", most were unable to give a reason for denying equivalence; they commonly added more counters to the shorter row in an attempt to make them equivalent again. A few gave no consistent answers in contrast to those placed in Stage III. Some of the latter had difficulty in verbalizing

(e.g. "because we did this"—demonstrating the action of making a one-to-one correspondence). One conveyed his meaning only by a gesture.

EXPERIMENT 2

Equalizing unequal groups

Methods. In this experiment the subject was required to make equal in number two unequal groups of counters, by moving some from the larger to the smaller group. This was devised to study the child's understanding of part-whole relations: that adding to one group involves subtraction from the other.

Where necessary with the more limited subjects, a demonstration with small groups (6 and 4) was given. For the actual experiment, larger numbers were used (e.g. 6 and 16, 8 and 18). A different total was used for each trial. If the subject achieved equality by making the same spatial patterns on both sides, one group was disarranged, whereupon the subject was asked about equality.

Results. Piaget again distinguished three types of response, the last (Stage III) involving concrete operations:

I. The child moves some counters from the larger to the smaller group and considers them equal if they cover the same area.

II. The child succeeds in making the groups equal, usually by matching them in spatial patterns, but denies equality when the arrangement is disturbed.

III. Having taken counters from the larger group to make it equal to the smaller, the child then divides the remainder equally between the two groups, not relying on spatial matching, and maintains his belief in their equality when disarranged.

The present subjects used a variety of methods, described below; counting as well as spatial matching played a part.

Logical method: Method 1. The subjects counted the smaller group, or arranged it in a regular pattern, then subtracted from the larger group the same number of counters as were in the smaller group by counting them or arranging them in an identical pattern; they then divided the remainder equally between the two groups, either by dividing it in half, or putting one counter successively to each group. They affirmed the equality of the groups, without needing to count in order to check (cf. Methods 2 to 5). (Some began by moving over a few counters in order to reduce the difference.)

Systematic trial and error: Method 2*a*. The subjects began as Method 1 but left the remainder from the larger group unequally divided, a fact which they discovered by counting. These subjects then moved one counter from the larger to the smaller group, counted both sides, moved another, counted again, and so on until equality was achieved. Having arrived at a difference of 2, it was not sufficient to move over one more counter and then, without counting, to know the two groups were equal; but after counting, equality was affirmed "because I've counted them". *Method* 2*b*. Subjects did not attempt to separate the surplus of the larger group but counted both first and then went on as Method 2a. *Method* 3. Both groups were arranged in similar patterns; counters were moved over in a trial and error manner, until an identical pattern was obtained. When one group was disarranged, equality

was affirmed. *Method* 4. As Method 3, but there was denial of equality even when the groups had just been counted.

Unsystematic trial and error: Method 5. Subjects counted the two groups or arranged them in patterns. They moved various numbers of counters to and fro so that first one group and then the other was larger, until they finally achieved success. For those who counted, numbers were no guide; those who made patterns of pairs moved both of a pair over together and only succeeded in splitting the pair after switching it to and fro several times. They were unsure, or denied equality when the pattern was upset. *Method* 6. As Method 5, but all the difference was moved over repeatedly and a solution was not found.

Random, global method: Method 7. A few counters were randomly moved over, without counting or arrangement in patterns. The groups were considered equal if they covered the same area. Some counted, if prompted, but this did not help.

In terms of Piaget's classification, Method 1 is operational (Stage III). Methods 2 and 3 are transitional between Stages II and III. These methods are inefficient and time-consuming, but the knowledge of having counted the same number did give a belief in equality, as it did not for subjects using Methods 4 and 5 who are classifiable as Stage II. Methods 6 and 7 are those of Stage I. Some subjects discovered a more efficient method during the course of several trials, and they have been classified by this; others used different methods of the same level. Thirty-four children and 16 adults did not comprehend the task.

VOL. 2 1961

EXPERIMENT 3

Seriation. This experiment was designed by Piaget to study whether the child had an understanding of number as forming a series. He examined this in terms of the method the child used to place in order of length a series of graded sticks, following this with questions designed to investigate the child's understanding of ordinal and cardinal numbers.

Method. In the present experiment, as in Piaget's, 19 graded sticks, differing by 0·4 cm and ranging from 9 to 16·2 cm, were used. The subject was instructed first to put in order of size a set of 10 sticks, which were alternate ones in the series and thus different by 0·8 cm. The second set of 9 sticks were then given for insertion, so that a series of 19 sticks was formed. Records were made of the method used for the first series and the insertions; of the amount of help needed for both; of the method of correcting errors, if any; and of evenness of the base.

Results. Piaget's three stages are as follows:

I. The child cannot put in order even the first set of sticks.

II. The child puts in order the first set by trial and error but has no means of dealing with insertions.

III. Both series are made without trial and error and a stick is inserted in the one place where it is longer than those before it and shorter than those that follow.

The present subjects were classified into the following categories:

(1) The sticks were placed in random order with no attempt at a series, nor could one be made with help: a wrongly placed stick was merely moved on to one end, frequently the wrong way.

(2) Some attempt was made to group the longer and shorter sticks or a staircase

arrangement was made of the tops, while the base was ignored. Considerable help was needed for success. Wrongly placed sticks and those of the second set were placed by most subjects on the ends. Only a few inserted them somewhere in the middle, mainly haphazardly, but with those nearly the same size. These subjects appeared to be sorting into two groups of the longer and shorter sticks, rather than making a series. These results and the verbal comments "big ones there, little ones there" suggested they had concepts only of big and little and not of bigger and biggest. Methods 1 and 2 are similar to Piaget's Stage I.

(3) These subjects differ from those in categories (1) and (2) by their method for the first set. They made no systematic selection of sticks by size, but measured several sticks in turn against one another until one looked right, then tried the rest against this until they found one that increased by the same amount, and continued in this trial and error manner, guided by perceptual differences, comparing only 2 sticks at a time. They built up the series on one end and so did not have to insert a stick in the middle. Success with the first set was achieved without help, or with minimal help over one or two errors. Methods of inserting the second set were as in category (2), and this set was put in the right order only with considerable help. These subjects were clearly unable to handle insertions or to compare the insertions with 2 others.

(4) For the first series, these subjects wholly or partly selected each time the next longest stick from those that were left, as did the next group (5), but they are distinguished from them by their method of insertion. They measured the inserted stick with those of the first set, but were clearly comparing it with only one, so that, when they arrived at a place where it differed by a minimal amount from a stick in the series, it was a matter of chance whether they inserted it to the left or right of this one. These subjects and those in category (3) qualify for Piaget's Stage II though two of them were transitional to the next level.

(5) These subjects were classifiable as Stage III. They selected sticks systematically by size for the first set, deduced the correct position for an inserted stick by comparing it with those on both sides and managed the second series by themselves. All but one, who failed to understand the question, realized that, when the series was disarranged, it would have to be remade in order to find out the ordinal number of a given stick in the series.

EXPERIMENT 4

Conservation of continuous quantity

In this experiment, Piaget was studying belief in the constancy of an amount when it undergoes changes in shape.

Method. The subjects were shown equal amounts of water in two identical glasses. The contents of one of them were poured into a tall, narrow glass, and the subject was asked about the equality of the amounts of water in both glasses, and instructed to give a reason for his answer. The water was exchanged between these 2 glasses several times. Further trials followed with two glasses and four glasses. In view of the inadequacy of verbal response, a further check was made by a filling method, the subject being instructed to put the same amount of sand in his glass as the experimenter did in hers.

Results. Piaget again distinguishes three stages, the third operational:

I. The amount of liquid is thought to vary with the size and shape of the container.

II. This is a conflict stage when the child begins to take account of compensations in height and cross-section, and affirms the equivalence of the amount in some cases, but not when the contents of a glass are poured into 4 small glasses.

III. The constancy of the amount is averred under all circumstances, the reason given referring to the fact that the water was poured out of the original glass, or that an increase in one dimension compensates a decrease in another, so that the water level is different.

It was found possible to classify the responses of the present subjects to this problem only as concrete operational (Stage III) or not Stage III, mainly because the modified filling method was used. Apart from a few cases, differentiation between Stages I and II could not be made in terms of Piaget's criteria, though incidental observations (not recorded in all cases) suggested alternative criteria, such as filling the measure up to the top.

Two transitional subjects (Stages II to III) put in the same number of measures as the experimenter did, and affirmed that there was the same amount of sand in both glasses, but they became uncertain when they noticed the difference in level, though they did not top up the lower one or tip some out of the higher one, as the others did. Some of the latter aimed to make the sand in two differently shaped glasses level at the outset, others only after they had put in the correct number of measures. Only one took some account of the differences in height and cross-section and thus qualified for Piaget's Stage II. Others, however, showed evidence of conflict which suggested his intermediate Stage II. One was puzzled that the levels were different when she had put in the same number of measures and was faced with an insoluble problem. Three were careful to fill the measure up to the top and thus actually put in the same amount of sand, but, when they saw the different levels, did not believe that the quantities were the same. Others did not take care to fill the measure up, some only half filling it. Examples of the reasons given by subjects who affirmed the constancy of the amount are: "it looks different but it's got the same number of measures in"; "it came out of there"; "that's smaller". These subjects were careful to fill the measuring glass up to the top.

VOL. 2 1961

COMPARISON OF THE FOUR NUMBER EXPERIMENTS

The number of subjects falling in each stage for each of the four experiments is shown in Table 1. It will be seen that a Stage III (concrete operational) response occurs most often for Experiment 1 (equivalence of corresponding sets).

The pattern of the performance of each subject on the four experiments is given in Table 2, with results for adults and children shown separately. The classifications in this table are as described above, except that responses transitional between Stages II and III, or between Stages I and II, are not shown separately, but are classified as Stage II and I respectively. The two subjects who were transitional between Stages II and III for Experiment 4 have been classified as Stage II, but otherwise those below Stage II for this experiment have been classified as Stage I to II. No comprehension of Experiments 2 and 4 is shown separately.

It will be observed that most of the subjects performed consistently either at the

TABLE 1. NUMBER OF SUBJECTS AT EACH STAGE FOR THE FOUR EXPERIMENTS

	Experiment 1	Experiment 2	Experiment 3	Experiment 4
Stage III	16	9	9	10
Transitional II to III	6	6	2	2
Stage II	53	10	18	
Transitional I to II	2	0	0	36
Stage I	17	19	65	
No comprehension	0	50	0	46
Total	94	94	94	94

TABLE 2. PATTERN OF PERFORMANCE ON THE FOUR NUMBER EXPERIMENTS

	Results of experiments (Stages)																			
Experiment 1	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	A
Experiment 2	C	B	C	C	B	B	—	A	A	B	B	B	A	—	—	A	A	—	—	—
Experiment 3	C	C	B	C	B	B	B	A	B	B	B	A	B	B	B	A	A	A	A	A
Experiment 4	C	C	C	B	B	A-B	A-B	A-B	A-B	C	A-B	A-B	A-B	A-B	—	A-B	—	A	—	—
No. of subjects who show pattern of results in each column: Adults	6	1	1	1	1	2	0	1	1	1	2	6	4	3	0	7	0	5	6	2
Children	1	0	0	0	0	0	1	0	0	0	1	2	0	0	3	1	5	0	13	17
Totals	7	1	1	1	1	2	1	1	1	1	3	8	4	3	3	8	5	5	19	19

C = Concrete operational (Stage III) B = Stage II
A = Stage I A-B = Stage I or II
— = No comprehension of task

concrete operational (Stage III) level or at the intuitive level (Stages I or II) for all four problems. There is also a transitional group who obtained both Stage III and Stage II results, a number of the latter being transitional between Stages II and III. Four subjects who obtained Stage III results for Experiment 1 and Stage II results for Experiment 2 were consistent in that they maintained the equivalence of the number of counters when disarranged in both experiments.

There is much less consistency between the two intuitive stages. Subjects who obtained only one Stage II result, however, were alike in that they all obtained this higher level for Experiment 1.

COMPARISON WITH I.Q.

The median verbal, performance and full-scale I.Q.'s on the Wechsler Adult Intelligence Scale (WAIS) of groups of the adult subjects are shown in Table 3. It will be seen that there is a trend for the median I.Q. to increase the greater the number of Stage III results, though the differences between one group and the next in Table 3 are not statistically significant when the Mann-Whitney test is applied to the data. However, I.Q.'s of 50 or more occurred significantly more often among subjects who obtained one or more Stage III results than among those with no

Stage III results ($\chi^2=10{\cdot}22$; $0{\cdot}01>P>0{\cdot}001$; $df=1$); subjects failing to reach the lower limit of the WAIS are included in the under I.Q. 50 group.

TABLE 3. PATTERN ON FOUR NUMBER EXPERIMENTS AND WAIS I.Q. ADULTS

Number experiment results	Median I.Q.			N	Range of full-scale I.Q.
	Verbal	Performance	Full-scale		
4 Stage III results	65	64	61	6	47 to 73
3 Stage III results	56	63	57	3	49 to 64
1 Stage III result	54	48	50	6	46 to 56
No Stage III result 2 or 3 Stage II results	51	48	47	9	44 to 58
No Stage III results 1 Stage II result	52	45	48	4	45 to 49
No Stage II or III results	—	—	—	0	—

VOL. 2 1961

It is of interest that equally low I.Q.'s (under 50) occur among those with and without Stage III gradings. It is also worth noting that two adults with extremely limited verbal ability achieved concrete operational thinking on all four number experiments, and the children were also limited verbally (e.g. of 26 who achieved a Stage II level on one or more number experiments, 10 failed the verbal comprehension questions placed at $3\frac{1}{2}$ years on Form L of the revised Stanford-Binet scale).

COMPARISON WITH ARITHMETICAL KNOWLEDGE

Eleven adults and one child were attending a class on reading and number. The arithmetic ages of these subjects, on Schonell's Mechanical Arithmetic Test, Form A (Schonell and Schonell, 1950), were obtained by an examiner who did not know the results of the number concept experiments. Two had arithmetic ages of 7 years 10 months and 7 years 5 months respectively; both had four Stage III results on number concept experiments. The rest failed to reach the lower limit of the test (7 years). Five of them could add number combinations up to 10 or 12; 4 of these had 3 or 4 Stage III results, and the other had one such result. Five subjects managed only the simplest additions which the examiner considered had been learned by rote; four of these had no Stage III results.

DISCUSSION AND CONCLUSIONS

This study has revealed that a group of subnormal adults and children make similar responses to normal children of 4–7 years when dealing with problems involving number concepts. Piaget's three types of response were distinguished for the first three experiments, but not for that involving the constancy of a quantity of liquid. This is possibly due to the modified experimental procedure, which was not designed to elicit the intermediate response. Piaget (1952, p. 13), however, did not find this response in all children.

The comparison of the performance of each subject on the four experiments indicates that the intellectually subnormal can reach a concrete operational level

for some aspects of number concepts and not for others. Comparison of three experiments also revealed unevenness with respect to the non-operational stages of number development (I and II). These results agree with those of Hyde (1959), who found unevenness in the development of number concepts in normal children, and with those of Lovell and Ogilvie (1960), who found that the conservation of quantity varied with the type of material.

There was, however, in the present group consistency in the pattern of performance on the various tasks: subjects who obtained only one Stage II result (with Stage I for the other tasks) all achieved the Stage II result for the same experiment (No. 1, one-to-one correspondence) and, when two Stage II results were obtained, one of these was always for Experiment 1. Thus it would appear that intellectually subnormal individuals, with the experiences of the present group, are able to make a one-to-one correspondence between two sets of objects before they succeed, using a trial and error method, with problems of making a series and equalising unequal groups. Secondly, it seems that they also reach a level of concrete operational thinking (in the form of the conservation of quantity) first in respect of objects which they themselves have placed in a one-to-one correspondence. This conclusion is limited to groups with similar experiences to the present one, and it should be borne in mind that the subnormal individuals who live at home might obtain different patterns of results from those who have lived in a hospital from an early age.

Such a difference in regard to the comparison of verbal with non-verbal intelligence was in fact found by Lyle (1959), whose group of institutional severely subnormal children was significantly more retarded in verbal ability than comparable children living at home. Although no conclusion can be drawn without a similar investigation of the number concepts of normal children, the failure of the present group with verbal test items suggests that the subnormal living in hospital are less advanced verbally than normal children with a similar development of number concepts. This suggests the hypothesis for future research that the development of operational thinking in Piaget's terms is not wholly dependent on the development of verbal ability.

Piaget's approach to the study of number concepts has applications to clinical psychology and education. Failure to obtain a score on the WAIS appears to indicate a degree of backwardness which is too great for operational thinking to be achieved, but the wide range of WAIS I.Q. among subjects who obtained one or more concrete operational result suggests that, for this population, the direct investigation of number concepts is more useful than an attempt to estimate from an intelligence test result whether an individual can learn arithmetical operations with understanding. Such an approach might usefully be applied to children who are being considered for education in schools for the educationally subnormal (E.S.N.). For example, a backward child of over 11 years who has achieved concrete operational thinking in number concepts is more suited to a senior E.S.N. school than to a training centre. Similarly such an approach is a useful addition to the few techniques that are available for the assessment of the educability of children with severe or multiple physical handicaps, for example the child with a combination of deafness and cerebral palsy. For a satisfactory application in this way, however, further research is needed on the concepts of children in E.S.N. and primary schools.

In addition, this approach can be used as a guide to the type of educational activity to provide for children in junior E.S.N. schools and in training centres for older severely subnormal children, in order to foster the development of number concepts in pre-operational children. For normal pre-operational children, Churchill (1958) found that the appropriate experience was the opportunity to handle material and play games that involved, for example, seriation, the matching of sets of objects, and the re-arrangement of elements that form a whole.

In conclusion, hypothesis I has been confirmed: the types of thinking of normal children with number concept problems have been found in a subnormal group. The second hypothesis was only partially supported, though the main inconsistency was between the two intuitive sub-stages, rather than between intuitive and concrete operational thinking.

SUMMARY

A study of the number concepts of 94 subnormal individuals has been made by means of Piaget's method. The responses to three experiments could be classified into Piaget's three stages, but responses to the fourth experiment could be classified only as concrete operational or not. Few subjects were at the same stage for all tasks. The results suggest that intellectually subnormal individuals with similar experiences to those of the group investigated reach a relatively advanced level for problems involving a one-to-one correspondence between two sets of objects, and a belief in the numerical equivalence of the two sets, before they do so for problems involving series and part-whole relations. It is suggested that Piaget's approach has clinical and educational applications to mental subnormality.

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VOL. 2 1961

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SOCIAL AND FAMILY BACKGROUND OF PRE-SCHOOL CHILDREN WITH BEHAVIOUR DISORDERS ATTENDING A CHILD GUIDANCE CLINIC*

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THE REASONS why pre-school children are brought to child guidance clinics are not established. Children other than those suffering from distinct pathological entities (such as brain damage, mental defect, epilepsy or childhood psychosis) are brought to clinics without it being clear how they differ from those whose parents manage to rear them unaided, or with the help of doctors, paediatricians and infant welfare clinics. The differences in children coming to child guidance clinics may lie in the social or family background, in the personality structure of the parents, or in the behaviour of the children themselves. Investigation is also needed to establish whether the problems for which young children are brought to clinics are shortlived, or if referral at this early age indicates an onset of what will turn out to be prolonged conflict within the child, between the child and his family, or between the child and the larger world. Little systematic investigation of child guidance clinic populations has been undertaken since the work of Witmer and her associates (1933, 1935, 1942) and these authors did not focus on pre-school children.

The small but intensive follow-up study here reported was undertaken to establish what had occurred to pre-school children who were first seen at the Maudsley Hospital Children's Department during the course of two years. The present paper describes the social and family background of the children studied, and compares them with data available for normal children. A subsequent paper will present the symptomatology and outcome in the disturbed children investigated.

METHOD OF INVESTIGATION

The names of all children on the clinic's admission register for 1952 and 1953 who were aged under 5 years on admission were obtained; those diagnosed as suffering from organic brain disease, mental defect, epilepsy or childhood psychosis were excluded. Of the 46 children presenting, records were available, and the children could be traced for follow-up examination, in 43 cases.

The case records and reports of subsequent treatment for the 43 children were examined, and related to the information obtained 3–6 years later by means of a personal interview with a parent and the child himself, and a school report was sought at the same time. In 42 cases a parent was seen, in 39 cases a child was seen, and in 1 case the follow-up was by letter and questionnaire only. In 38 cases the parents gave permission for a school report to be obtained.

*Abstracted from a dissertation submitted in partial fulfilment of the requirements for the Academic Diploma in Psychological Medicine, University of London; while at the Maudsley Hospital.

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In order that the characteristics of this group of children may be compared more validly with those of children attending other child guidance clinics, we must mention certain features of the Maudsley Hospital Children's Department likely to influence the type of cases referred. The clinic is situated in South-East London, and the majority of patients come from this area and from the neighbouring counties of Surrey, Kent and Essex. The clinic is a psychiatric teaching unit, and has beds for in-patients, with the result that a proportion of the referrals come from other child guidance clinics. The clinic is part of a hospital for adult patients suffering from nervous and mental disorders, so that the group of children studied may be somewhat loaded with children whose parents have had psychiatric treatment, and who were referred as a result of their parents' attendance at the hospital. One of the consultants at the hospital also attended a paediatric unit, and it is possible that the children referred from this unit might not have reached psychiatric care without this liaison.

In two respects at least, age-proportion and sex ratio, the children seen at the clinic resembled the populations of other child guidance clinics. The proportion of children admitted who were under 5 years of age was 7·9 per cent. Comparable proportions from other clinics are: 8 per cent for the Bromley Child Guidance Clinic reported by Morgan *et al.* (1951), 5·71 per cent for children aged 3 and 4 years only, reported by Burns (1951). The sex ratio of boys to girls for children of all ages attending the Maudsley Hospital Children's Department was 2·14 : 1. This preponderance of boys is similar to that reported from other centres: 2 : 1, Witmer (1933); 1·9 : 1, Burns (1951); 2·04 : 1, Barbour (1955).

Admission data from the case records and information obtained at follow-up interview for the children under 5 years were compared with similar data in the case records of a control group of 43 children aged 5 years and over, who attended the clinic with behaviour disorders during the same period (1952 and 1953).

Social data about the occupational class of fathers, working mothers and housing were obtained, and compared as far as was possible with the figures given by Douglas and Blomfield (1958) for a national sample of children who were of similar age in 1950 as were the 43 children in the present investigation at the time of their admission to the clinic in 1952 and 1953.

RESULTS OF INVESTIGATIONS

1. *Sex and age*

Of the 43 children studied, 24 were boys and 19 were girls. At the time of admission the ages of boys ranged from 2 : 5 to 4 : 11, with a mean of 3 : 10; those of girls ranged from 2 : 3 to 4 : 11, with a mean of 3 : 9.

At follow-up, the boys' ages ranged from 7 : 2 to 10 : 9, with a mean of 9 : 0, and those of girls ranged from 7 : 0 to 10 : 10, with a mean of 8 : 7.

The interval to follow-up ranged from 3 : 10 to 6 : 4, with a mean of 5 : 2 for boys and 4 : 11 for girls.

The ratio of boys to girls among the pre-school children (1·26/1) was appreciably smaller than that among the older children referred to the clinic (2·19/1), and resembled that found by Bolton (1955) for children of this age attending the Brixton Child Guidance Clinic (1·38/1).

VOL. 2 1961

2. *Admission circumstances*

The group of children studied was homogeneous in that, as was to be expected, they all reached the clinic on the initiative of their parents (in the case of one child already in residential care, on the initiative of the nurse responsible for him).

(a) *Authorities first approached by parents.* The authorities first approached by the parents were as follows (Table 1):

TABLE 1. AUTHORITIES FIRST APPROACHED BY PARENTS

General practitioner	25 cases
Health visitor or infant welfare clinic	5 cases
The Maudsley Clinic or another child guidance clinic directly	6 cases
Hospital paediatricians already supervising the child	2 cases
Psychiatrist treating a parent in the Adult Department of the Maudsley Hospital	2 cases
Almoner of another hospital attended by the mother	1 case
Mental Health visitor supervising the mother	1 case

(b) *Immediate source of referral.* The immediate source of referral of the children studied was compared with that of the control group of older children (Table 2):

TABLE 2. IMMEDIATE SOURCE OF REFERRAL

Immediate source of referral	Number of children in the group studied (under five years of age)	Number of children in the control group (aged five years or over)
General practitioner	16	14
Parents' directly	4	3
Other child guidance clinic	3	5
Adult Department of the Maudsley Hospital	2	1
Other hospital attended by mother	1	–
Mental Health authority supervising mother	1	–
Army Education Institute	–	1
Infant welfare clinic	3	–
Antenatal clinic	1	–
Medical Officer of Health	1	–
Residential nursery	1	–
Hospital paediatrician	10	3
School Care Committee or School Medical Officer	–	9
Probation Officer or headmaster of Approved School	–	7

It is of interest to note that the proportion of referrals from general practitioners and directly from parents is the same in both groups, and that the shift observed is in referrals from other agencies. Children under 5 years were referred mainly by general practitioners and hospital paediatricians, older children by general practitioners,

schools and probation officers. It was thought possible that the observed difference in sex ratio between the pre-school children and the older children referred to the clinic would be related to their different sources of referral, the increased preponderance of boys in the older group being related to the increased referral of children to the clinic by schools and juvenile courts. This proved not to be so. Among the control group of children over 5 years, 22 boys and 8 girls were referred by parents directly or by general practitioners and paediatricians consulted by the parents, and 10 boys and 3 girls were referred by schools and juvenile courts.

3. *Social circumstances*

(a) *Occupational class of fathers.* The occupational class of the father at or before the time of admission could be ascertained for 42 of the 43 pre-school children studied and in 42 of the older children constituting the control group (see Table 3).

TABLE 3. OCCUPATIONAL CLASS OF FATHERS

Occupational class of father according to Registrar General's 1950 Classification	Incidence in group studied (children under five)	Incidence in control group (children five years and over)	Expected incidence according to Douglas and Blomfield's National Sample of Children aged four years in 1950*
I	3 } 11	2 } 8	7·8
II	8 }	6 }	
III	23	20	23·4
IV	3 } 8	9 } 14	10·8
V	5 }	5 }	

*The classification of occupations used by Douglas and Blomfield (1958) differed slightly from that of the Registrar General. For the purpose of comparison, Professional, Employer, Salaried, and Self-employed have been equated with the Registrar General's classes I and II; Skilled and Black-coated with class III; Semi-skilled, Unskilled, and Agricultural with classes IV and V. The percentages given have been converted into the expected incidence in a group of 42 children.

The figures are too small for statistical analysis, but suggest that the occupational class of the fathers of the pre-school children attending the clinic was no lower than that in a comparable normal population.

(b) *Employment of mothers.* At the time of the children's admission to the clinic 7 of the 46 mothers were in full-time or part-time employment. In Douglas and Blomfield's national sample of children, the proportion of mothers of pre-school children who had been in regular paid employment at any one time was 14 per cent for the country as a whole, and 21·1 per cent for London and the south-east of England. This suggests that the number of working mothers in the group of children studied was no higher than that in a comparable group of normal children.

VOL. 2 1961

(c) *Overcrowding.* Using Douglas and Blomfield's index of overcrowding, i.e. more than one and a half persons per living-room, it was found that at the time of admission, in 1952 and 1953, 11 of the 43 families studies suffered from overcrowding. This incidence is similar to that in the national sample of children in 1950, when the children were 4 years old, which was 29 per cent (12·5 in 43 cases) in the London area, and 20 per cent (8·6 in 43 cases) in the county boroughs and large burghs of the south-east of England.

The above findings indicate that social hardships were not unusually frequent in the group of children studied. This is in agreement with the impressions formed by the author in the course of her home visits at the time of follow-up; fathers were in regular employment except in one case; the mobility of the families was high, and was as a rule associated with improvements in living conditions.

Two families could however be described as "hard core problem families" according to the definition of the London County Council Medical Officer of Health (1956).

4. *Family circumstances*

(a) *Family size and ordinal position.* Family size was not remarkable in the group of children studied. The children came from smaller families than the control group of older children, but the difference can probably be accounted for on the basis of age alone (Table 4).

TABLE 4. FAMILY SIZE

Number of children in family	Incidence in group of 43 children admitted at under five years		Incidence in group of 43 children admitted at five years or over
	On admission: mean age 3:10 years	At follow-up: mean age 8:10 years	Mean age 10:1 years
1	10	7	6
2	24	16	14
3	6	11	12
4	1	4	5
5+	2	5	6

A comparison of ordinal position observed with that expected in a group of children from families of similar size (in terms of number of children in the family) shows no difference (Table 5).

(b) *Maternal age.* A comparison of maternal age at birth of child in the group of children studied with that in the control group of older children and with the Registrar General's figures for maternal age at birth of child in Greater London and South East England in 1949, showed no statistically significant differences, the numbers being very small.

TABLE 5. ORDINAL POSITION

Ordinal position	Only	First	Middle	Youngest
Observed number of children in group studied	10	15	4	14
Expected number of children in a group of children with a similar family size —only one child of each family being expected to present*	10	14·6	3·8	14·6

*This was calculated by regarding the children studied and all their siblings as the population at risk, of whom 43 individuals presented at the clinic. The size of the sibship and the ordinal position of each child who presented at the clinic were known. The number of children in each ordinal position who would make up the 43 cases if their selection were due to chance alone was then calculated.

VOL. 2 1961

(c) *Broken homes.* Two children were illegitimate and had been adopted in early infancy. Five other children had lost one parent, one of these children being also illegitimate. At the time of follow-up two further homes had broken up. Among the control group of older children, 8 came from broken homes. These figures are probably higher than for children in the general population. Douglas and Blomfield (1958) excluded illegitimate children from their study, and found the incidence of broken homes for other reasons to be 4·4 per cent (about 2 in 43 cases). The authors considered this incidence to be high, and explained it on the basis that all the couples in their survey had been subject to the special strains of war-time. This was not so for all the parents of the children studied.

(d) *Parental deprivation among parents of children studied.* Loss in childhood of one or both parents (in association with illegitimacy, or caused by death, desertion, separation or divorce) was a common finding in the history of the parents of the children under investigation. Twenty-one of the 43 mothers had been thus deprived before they were 10 years old. Ten of the fathers had suffered a similar loss, all in early childhood except for one, whose father died when he was 14. Among the parents of the 43 children there were 26 couples (60·5 per cent) in which one or both partners had suffered from parental deprivation in childhood. In the control group of older children 20 sets of parents (46·4 per cent) were affected, 12 mothers and 11 fathers.

(e) *Psychiatric disturbance of parents.* Fifteen parents, 10 mothers and 5 fathers, had been treated for psychiatric disorders at or before the admission of their child to the clinic. Twelve sets of parents were affected. Two parents had been in mental deficiency institutions; one father had been hospitalized repeatedly because of paranoid schizophrenia; one mother had been in hospital a number of times with recurrent depressions; one father had been hospitalized once for "nervous trouble"; 6 parents had received psychiatric out-patient treatment; 4 had been treated by their own doctors for psychiatric disorders. During the follow-up period 2 of these parents required further mental hospital admission, and one received further out-patient care. In addition 4 previously untreated parents received psychiatric care during this period, 2 in mental hospitals and 2 from their general practitioners.

The author also assessed the mothers' emotional disturbance at the first interview (on the basis of descriptions found in the case records) and at the time of follow-up (on the basis of the follow-up interview). Initially, 7 mothers were assessed as severely disturbed (3 were in psychiatric treatment; in 3 cases such treatment had been recommended; one had made a suicidal gesture); 24 mothers were assessed as moderately disturbed, depression being the commonest abnormal feature; 11 mothers were assessed as not disturbed. At follow-up 5 mothers were assessed as severely disturbed, 17 as moderately disturbed and 21 as not disturbed.

At the time of admission the parents of 5 children (4 mothers and 2 fathers) had been treated at the Maudsley Hospital, and this may have contributed to the children's referral to the clinic. The assessments of the mothers' emotional disturbance were based on case notes containing varying and often inadequate information. Nevertheless the findings suggest that the incidence of psychiatric disturbance in the parents of pre-school children referred to a child guidance clinic is high.

DISCUSSION

It has been shown that the social environment of the families of the group of pre-school children investigated was no worse than that of children of the same age born at a similar time in similar parts of the country in the general community. This is in line with the findings of Grant (1958) in a survey of children over 5 years of age who had been admitted to the Maudsley Hospital Children's Department in the course of one year. He found no difference between the distribution of occupational class of fathers of these children and that of the general population in the same part of the country.

Family size did not differentiate the children studied from older children attending the clinic, nor did ordinal position appear to be a factor determining whether or not a child would present at a child guidance clinic; nor again did age of mother at the child's birth, although Bolton (1955) found that parents of pre-school children were younger than parents of older children attending a child guidance clinic.

Two factors appear to be significant in the background of the children investigated: (1) Parental deprivation experienced by their parents in childhood; and (2) a high incidence of psychiatric disturbance in these parents. In addition, although the figures are small, there is a suggestion that the number of broken homes and of problem families in the group of children studied was possibly in excess of that in the general population. These factors require confirmation by a comparative study of children attending a child guidance clinic and children in the community. None of the data available on the incidence of parental deprivation in childhood is directly comparable with the above findings. If confirmed, they would support Bowlby's thesis (1951) that: "The origin of adults being unable to make effective family relationships is not infrequently itself a result of their having been deprived of a normal home life in their own childhood". The experience of such deprivation may be a particular handicap for parents when their children are very young and completely in their charge. It may be that parents thus deprived foster disturbed behaviour in their children, or that, lacking in confidence, they regard normal behavioural difficulties of children as signs of disturbance and anxiously seek reassurance and help from outside sources.

A high incidence of psychiatric disturbance among parents of children attending a child guidance clinic has been reported also by Huschka (1941). She investigated psychopathological disorders in mothers of a group of children attending a New York child guidance clinic. The socio-economic background of these children was higher than that in the general community. Huschka surveyed the case records of children admitted in the course of 3 years, and found that 203 out of 488 mothers (41·6 per cent) were recorded as having definite psychiatric symptoms. Psychiatric disorders may be particularly common in parents of very young children referred for psychiatric treatment. Bolton (1955) found that mothers of children under 5 years attending a child guidance clinic were more anxious than mothers of school-age children. Of 50 mothers of children under 5 years, 24 were "frankly neurotic", and 20 were "overanxious" or "mildly unstable".

An interesting finding is that the characteristic male preponderance generally found in children referred for psychiatric treatment (and present in the control group of older children) was very slight in the group of pre-school children studied. Bolton (1955) in her comparative study of pre-school and school-age children had found the same. It has been shown that this difference is not due to a differential identification of problem behaviour by parents on the one hand and school teachers and the juvenile courts on the other. It will be shown in a subsequent paper that the identification of problem behaviour in children is related to the manifestation of aggressive types of behaviour, and that these have definite age trends which are different in boys and in girls.

VOL. 2 1961

SUMMARY

(1) A group of 43 pre-school children, without gross organic disorders or psychoses, who were admitted to a child guidance clinic in 1951 and 1952 were followed up 3–6 years later.

(2) The social and family background of the children has been described.

(3) Social factors appear to be unimportant in determining whether or not a child will be referred for psychiatric treatment.

(4) The family background was characterized by a high incidence of psychiatric disturbance, and of parental deprivation in childhood, in the parents of the children.

(5) The usual male preponderance found in children referred to child guidance clinics was minimal; this was not related to the fact that all the children were referred at their parents' instigation.

(6) A comparative study of parental background and parental psychiatric status in children attending a child guidance clinic and children in the general community would help to elucidate the reasons for psychiatric referral in small children, and would clarify their special needs. Such a study should be combined with a comparison of symptomatology in the two groups.

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SYMPTOMATOLOGY AND OUTCOME OF PRE-SCHOOL CHILDREN WITH BEHAVIOUR DISORDERS ATTENDING A CHILD GUIDANCE CLINIC*

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VOL. 2 1961

THE present paper will examine the symptomatology of 43 pre-school children at the time of their first visit to the Maudsley Hospital children's department and again at the time of follow-up some 3–6 years later. The family and social background of the children and the method of enquiry have been described in a previous paper (Wolff, 1961).

The subjects consisted of 24 boys and 19 girls. They were first seen at a mean age of 3 : 10 (range from 2 : 3 to 4 : 11). At follow-up the mean age was 8 : 10 (range from 7 : 0 to 10 : 10).

SYMPTOMATOLOGY

1. *The presenting complaints*

The presenting complaints were numerous and were expressed in very varied terms. The following groupings emerged:

I. *Complaints about the child being bad or unmanageable.* These consisted of the following: temper tantrums, naughtiness and disobedience, spitting food out at table, refusal to sit down for meals, constant moaning and spitefulness, overactivity, spitefulness to sister, refusal to go to bed at night, constant screaming, being a handful, abnormal behaviour and a bad influence on other children, naughtiness and wickedness, stealing sweets and ice cream.

Twenty children presented in this way: 13 boys and 7 girls. All 4 children who at follow-up were found to be in residential care had presenting complaints of this nature.

II. *Complaints about the child's fearfulness.* These consisted of the following: multiple specific fears, being highly strung, severe food refusal with weight loss. (This symptom, accompanied in most cases by vomiting and sometimes by abdominal pain, is included here because in the form in which it was found in this group of children it appeared to be an expression of fearfulness and was always accompanied by complaints of specific fears or night terrors, and often by excessive clinging to the mother.)

Six children presented in this way: 5 girls and 1 boy.

III. *Complaints about habit disorders.* These consisted of bed-wetting, soiling and headbanging. Five children presented in this way: 4 boys and 1 girl.

IV. *Complaints about speech disorders.* Four children presented in this way: 2 boys and 2 girls.

* Abstracted from a dissertation submitted in partial fulfilment of the requirements for the Academic Diploma in Psychological Medicine, University of London while at the Maudsley Hospital.

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V. *Miscellaneous complaints.* These consisted of breathholding attacks, withdrawal, refusal to play with toys, nightly attacks of laughter, attacks of going stiff, babyish behaviour in presence of father from whom mother had separated, child telling mother that father had sexually interfered with her.

Eight children presented with these complaints: 4 boys and 4 girls.

2. *General symptomatology*

In order to obtain a general picture of the symptomatology of the children on admission and at follow-up some arbitrary grouping of symptoms was necessary. Three qualitative categories were set up, each consisting of 5 symptoms. The five symptoms in each category were those found to be most commonly recorded both in the case notes and during the follow-up interviews.

Phobic symptoms:	specific fears
	night terrors
	excessive timidity
	excessive clinging to mother
	severe food refusal
Habit disorders:	sleep disturbances other than night terrors
	eating disturbances other than severe food refusal
	enuresis—more than just "occasional"
	encopresis
	gratification habits (thumb sucking, rocking, masturbation)
Aggressive symptoms:	disobedience or stubbornness
	aggressivity recorded as such
	cruelty
	destructiveness
	temper tantrums

These figures show that:

(1) 'Aggressive' symptoms were recorded significantly more frequently in boys than in girls at the time of admission ($t=2{\cdot}14$, $0{\cdot}05>P>0{\cdot}02$). The difference in the proportion of children affected did not reach statistical significance, but the number of symptoms recorded for each affected child was greater in boys than in girls ($t=2{\cdot}398$, $0{\cdot}05>P>0{\cdot}02$). Aggressive symptoms were the commonest type on admission in boys in terms of the number of symptoms per affected child.

(2) 'Phobic' symptoms were recorded more frequently in girls than in boys at the time of admission, but the difference was not statistically significant. The difference in the proportion of children affected did not reach statistical significance but the number of symptoms recorded for each affected child was greater in girls than in boys ($t=2{\cdot}964$, $0{\cdot}02>P>0{\cdot}01$). Phobic symptoms occurred in girls with the same frequency as habit disorders but were commoner in girls than aggressive symptoms at this stage.

(3) 'Habit disorders' occurred with approximately equal frequency in boys and girls at the time of admission.

(4) At the time of follow-up, the incidence of 'aggressive' symptoms was about

TABLE 1. INCIDENCE OF PHOBIC SYMPTOMS, HABIT DISORDERS, AND AGGRESSIVE SYMPTOMS

Type of symptom at initial interview	24 boys			19 girls		
	Phobic	Habit	Aggressive	Phobic	Habit	Aggressive
No. of times recorded	27	48	53	34	34	24
No. of children with one or more such symptoms	16	21	20	15	17	12
Per cent of children with one or more such symptoms	66·7	87·5	83·3	78·9	89·5	63·2
Average no. of symptoms per child affected	1·7	2·3	2·7	2·2	2·0	2·0
At follow-up						
No. of times recorded	20	31	20	16	20	13
No. of children with one or more such symptoms	14	18	13	10	13	10
Per cent of children with one or more such symptoms	58·4	75	54·2	52·6	68·4	52·6
Average no. of symptoms per child affected	1·4	1·7	1·5	1·6	1·5	1·3

VOL. 2 1961

the same in boys and girls, both in terms of the proportion of children affected and the number of symptoms recorded for each affected child.

(5) The same was true of phobic symptoms and of habit disorders.

(6) Although all types of symptoms had become less frequent at the time of follow-up, this decline in frequency was most marked in the case of aggressive symptoms in boys. It was also quite marked in the case of phobic symptoms in girls.

3. *Incidence and fate of some individual symptoms*

The commonest symptom recorded on admission and at follow-up was *temper tantrums*. This occurred in 27 children (15 boys and 12 girls) on admission and in 11 children (6 boys and 5 girls) at follow-up. It was never recorded as a new symptom at follow-up. The next most common symptom was *specific fears*. This occurred in 23 children (10 boys and 13 girls) on admission, and in 15 children (8 boys and 7 girls) at follow-up.

Enuresis was a common symptom, occurring in 7 boys and 8 girls on admission and in 5 boys and 5 girls at follow-up. These figures are higher than those recorded for a national sample of children in 1956 by Douglas and Blomfield (1958). They found the prevalence of enuresis in boys at 4½ years to be 13·62 per cent, and at

7¾ years, 8·09 per cent. The corresponding figures for girls were 10·55 per cent and 6·41 per cent. *Encopresis* occurred in 5 boys and 2 girls on admission. At follow-up all 7 children had ceased to soil themselves.

Conduct disorders such as lying, stealing and truanting were uncommon in this group of children both on admission and at follow-up. *Wandering* from home was recorded in 2 girls and 3 boys on admission but never at follow-up.

Severe food refusal of sudden onset with weight loss and with or without vomiting was recorded on admission in 5 children, all girls. It was in each case associated with specific fears or night terrors and with clinging to the mother. The symptoms were precipitated in one case by an attack of tonsillitis; in another by the mother's admission to hospital for a therapeutic abortion; in a third by the return home of the father after a temporary absence abroad; in a fourth the symptoms began after the child's first restaurant meal and coincided in onset with a marked specific fear of men. In the fifth case the circumstances surrounding the onset of the symptoms could not be determined. In all children the symptoms cleared up quickly but in one case they returned as a transient disturbance after the child had first enquired where babies came from. One of the affected children was at follow-up found to be somewhat obese and eating excessively.

OUTCOME

1. *Children living away from home*

At the time of admission one child was in residential care. At follow-up 4 children were in residential care, and 2 attended boarding schools. All others were living at home and attending ordinary primary schools.

2. *Children in psychiatric treatment*

Four children were receiving psychiatric treatment at the time of follow-up.

3. *Revision at follow-up of earlier diagnosis*

The follow-up showed that the diagnosis of mental deficiency was missed in one case at the time of admission. Mild brain damage had not been clearly identified at that time in three cases, all boys, and all poorly adjusted at the time of follow-up.

4. *Assessment of outcome*

Outcome at follow-up was assessed in three different ways: (i) a clinical assessment of overall outcome was made on a 4-point disturbance rating scale; (ii) parental concern about the child was rated in terms of the parents' expressed wish for further treatment and the demands they made on the author during the follow-up interviews; (iii) school reports when available were rated according to the problem presented by the child at school irrespective of his scholastic abilities.

On all three measures outcome was less good for boys than girls but the difference reached statistical significance ($P<0·05$) only in the case of overall assessment of outcome (i) ($\chi^2=4·13$, $df=1$).

5. *Factors related to outcome*

(i) Seven children on admission came from *broken homes*. At follow-up only one

TABLE 2. OVERALL ASSESSMENT OF OUTCOME

Disturbance rating	0	1	2	3	Total
Boys	3	6	9	6	24
	9		15		
Girls	8	6	2	3	19
	14		5		
Total	11	12	11	9	43

of these was assessed as not disturbed and one as mildly disturbed. Four were moderately disturbed and one was severely disturbed. (ii) In all 4 cases where there was *open marital conflict* on admission the disturbance rating of the children at follow-up was 2 or 3. (iii) Three of the 12 children of *parents who had received treatment for psychiatric disorders* were in residential care at the time of follow-up. Of the other 9 children, 2 were assessed as severely disturbed, 3 as moderately disturbed, 3 as slightly disturbed and only one as not disturbed. (iv) A comparison of outcome with *appointment failure rate* suggests that poor outcome may be associated with a high appointment failure rate, but the figures do not reach a 5 per cent level of significance ($\chi^2=3{\cdot}11$, $0{\cdot}1>P>0{\cdot}05$).

VOL. 2 1961

TABLE 3. RELATIONSHIP BETWEEN OUTCOME AND APPOINTMENT FAILURE RATE

Disturbance rating	Number of appointments failed			Total
	None	Less than 1 in 3	1 in 3 or more	
0 and 1	10	4	5	19
		9		
2 and 3	4	7	6	17
		13		
Total	14	11	11	36*

* Seven children were not given out-patient appointments after the diagnostic interview.

Outcome was not found to be related to (v) the *mode of discharge* from the clinic (Table 4), nor to (vi) the *number of interviews* (Table 5).

DISCUSSION

In most of the children studied, the symptomatology on admission did not differ from the range of behaviour likely to be found at this age in children never referred

TABLE 4. RELATIONSHIP BETWEEN OUTCOME AND MODE OF DISCHARGE

Disturbance rating	Mode of discharge			Total
	By clinic	At mother's suggestion	Lapsed	
0 and 1	12	5	5	22
		17		
2 and 3	9	3	7	19
		12		
Total	21	8	12	41*

* In 2 cases the mode of discharge was not known.

TABLE 5. RELATIONSHIP BETWEEN OUTCOME AND NUMBER OF INTERVIEWS

Disturbance rating	Number of interviews			Total
	Initial Interview only	1–9 subsequent interviews	10 or more subsequent interviews	
0 and 1	4	13	6	23
2 and 3	5	8	7	20
Total	9	21	13	43

to a clinic. There were exceptions; some children presented with behaviour of such deviant and stereotyped quality that no observer would fail to identify it as abnormal. Examples of such behaviour were: breath-holding attacks leading to convulsions (2 cases); severe speech defect (3 cases); severe food refusal with weight loss and vomiting (5 cases). This last symptom complex, on further study, might merit consideration as a possible syndrome.

Although habit disorders were frequently encountered in the children on admission, few parents presented these as the primary complaint. They appeared to be more concerned about their failure to manage their children's aggressive and negativistic behaviour.

The sex and age trends of symptoms in the series of children investigated resemble those observed in a longitudinal study of a group of normal children by MacFarlane *et al.* (1954). These workers showed that most personality problems of children have two age peaks, one during the pre-school period and one during pubescence. Between 6 and 9 years these normal children were less tense and showed fewer symptoms. Moreover, at 5 years, temper tantrums occurred significantly more often in boys than girls, and physical timidity occurred more often in girls than boys. Aggressive types of behaviour manifested earlier in girls than in boys and were given up earlier also.

The findings of the present study also correspond to the sex and age trends of some individual symptoms established for normal children. Goodenough (1931) in a study of anger in young children found that between 2 and 6 years boys displayed more anger than girls, but that by 8 years no sex differences were discernible, due to a decrease in outbursts of anger in boys. Pratt (1945) in a study of fears in rural children aged 4–16 years found that girls admitted to significantly more fears than boys. (Unfortunately this author did not analyse the sex differences for different age groups separately.)

Grant (1958), in his study of sex and age trends of symptoms manifested in new referrals of school-age children to the Maudsley Hospital children's department during one year, found that at all ages boys displayed more outgoing and aggressive behaviour than girls. This is at variance with the present author's findings at follow-up, when the children had reached school age, and may be related to factors determining selection of children for psychiatric treatment.

Examination of the children at follow-up showed that many still had manifest disturbances. Boys were assessed as more disturbed than girls on all measures of outcome. Such a sex difference in outcome was not found by Witmer (1935) in her study of children followed-up some years after discharge from a child guidance clinic. However, she did not break down her figures according to age.

VOL. 2 1961

No direct relationship was found between outcome and the number of visits to the clinic. However two-thirds of the mothers of the children studied thought benefit resulted from attendance at the clinic. All mothers appeared at the time of admission to have been very distressed about their children. At follow-up most expressed relief that the anxious period was over, many relating this to their visits to the clinic.

SUMMARY

1. The symptomatology on admission and 3–6 years later of 43 pre-school children attending a child guidance clinic has been described.

2. The sex and age trends of symptoms resembled those found by other workers for normal children in the community.

3. Outcome was worse for boys than girls. Children did less well when they came from broken homes, when there was open marital strife, and when parents had been treated for psychiatric disorders in the past. High appointment failure rate was also associated with poor outcome.

4. The syndrome of severe food refusal with weight loss and vomiting, associated with specific fears or night terrors and timidity occurring in girls under five merits further study.

5. A comparative study of clearly defined behaviour patterns in children attending child guidance clinics and in a comparable group of children in the community would be desirable.

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A YOUTH CLUB FOR PSYCHIATRIC OUT-PATIENTS

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VOL. 2 1961

ADOLESCENTS present a special problem in psychiatry. A few come for treatment because of anxiety or depression for which they actively desire help, but the majority, frightened and hostile, are sent by their teachers or probation officers; or they are led to the clinic by irate parents.

Treatment by drugs or by some form of verbal analysis is either inapplicable to these patients or else only a partial solution of their problems. Some of the difficulties in psychoanalysis of adolescents, which also apply to other forms of analytical therapy, have been described by Anna Freud (1958). It is "a venture in which the analyst has to meet resistances of unusual strength and variety [in which] preoccupation with the present time . . . with little or no libido left available for investment either in the past or in the analyst [blocks treatment, and where] to try and analyse an adolescent in his phase of successful detachment from the past seems to be a venture doomed to failure" (p. 255). Another disadvantage of analytical psychotherapy during this period (when many young people are not ripe for this method) is discussed by Eissler (1958) who raises the point that "psychotherapy during adolescence frequently keeps the patent from entering psychoanalysis later" (p. 223), presumably when the therapy is either inappropriate or prolonged and unsuccessful.

Some adolescents may benefit from small analytical or activity groups (as described by Slavson (1946), p. 216), but it is difficult in most clinics to get enough compatible adolescents at any one time to start such a group.

For these and other reasons, in February 1960 we opened a therapeutic Youth Club at the Marlborough Day Hospital.

Therapeutic social clubs for adult psychiatric patients have been used in this country since 1938 and described by Bierer (1941, 1949, 1955). We are surprised that we have found no references to any other youth club run by psychotherapists. We will therefore describe the organization of this club, and the different types of adolescent patients who may benefit from such therapy.

THE CLUB

Organization

The club meets every Thursday evening from 7.30 p.m. to 10.0 p.m. We are allowed by the Hospital Management Committee to use the ground floor of this hospital. The main activities take place in a large reception room. There is also a hall with reception desk which is particularly useful for waylaying gate-crashers who might cause trouble in the main room. Another, medium-sized, room is available for table tennis, and a small room for private talks or small discussion groups. We

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are sponsored by the Institute of Social Psychiatry, and in close contact with regional youth organizations.

Full members are allowed to bring one friend each, but we limit membership numbers so that the average attendance does not exceed forty, there being 57 members on our list. Boys and girls from 14 to 19 years of age can join, and the only qualification for full membership is that they must have been interviewed alone by a psychotherapist at least once. This means that as well as our own patients we have some members who have been treated at other clinics, and others from probation officers or approved schools who have had their psychiatric examination in a remand home.

At the beginning we introduced a few of our 'normal' adolescent friends and relatives as honorary members to get the club established. As the club became more popular, some of the regular friends of members began to clamour for membership cards. Many of these were manifestly more disturbed than the patients. We therefore allowed them to become Associate Members provided that they obtained letters of introduction from their general practitioners. It is interesting that of the 30 or so who asked for letters about the club to take to their G.P.s, 15 in fact bothered to do so. We feel that this is a small but important step in lessening the fear of psychiatry among young people.

In the main room the lights are low. There are tables with check gingham cloths, and popular music from the members' records is played almost continuously. Cold refreshments are sold at cost price, but those coming to the club pay a subscription of 3d. each, out of which we cover such items as the laundering of tablecloths. The profit can be used to hold an occasional party. In this main room they dance, talk, flirt, play cards, chess or draughts, or merely observe as they wish. There is table-tennis in a separate room and a dartboard in the hall.

The atmosphere is that of a coffee bar rather than of an educational enterprise. As this fact has disturbed a few of our adult visitors, we will later discuss the motive behind this apparent lack of direction of activities, and our own relatively passive part in the club.

Staffing

A male psychiatrist and a female psychotherapist, both middle-aged, and a younger female social therapist are present, as well as the hospital night-receptionist in the hall.

We have found this number good, not so much because it is in the proportion of one adult to ten adolescents, but because it allows one person to keep an eye on each of the four rooms in the club.

Our present staff is perhaps similar to that of de Maupassant's (1885) Mme. Tellier, in whose establishment: "The staff being limited in number, each had been chosen as a sample, an epitome of one type, so that every client might find at least an approximation to his ideal." (p. 121.)

Some members are very selective in choosing the adult to whom they wish to relate, e.g. many of the shyer boys prefer the younger woman, who is less reminiscent of a parent. Blos (1953) too has commented on the personality of the therapist and its relationship to successful treatment in adolescents.

COUNTER-TRANSFERENCE

It is fashionable and profitable for psychotherapists to study counter-transference. This is as important in a club as in individual therapy.

Adolescents may stimulate nostalgic feelings in adults, which can lead to sentimentality or envious feelings which make the adult irritable. Again, many club leaders may unconsciously stimulate aggressive or sexual acting-out in youths and "from it derive vicarious gratification" (Gordon, 1960, p. 764). Fear of losing the younger person's affection can make for a placating or seductive attitude which disturbs the latter. Conversely an undue need to earn the youth's respect may result in pointless authoritarianism.

We think that we are conscious enough of the above, but we still have some conflict about whether or not we ought to be leading these young people more in a verbal or practical way.

The Albermarle Committee (1960), discussing youth clubs run by religious organizations, is, like ourselves, in favour of leadership by example rather than by didactic or authoritarian methods. This is still a matter of conflict in such clubs. For example, a local vicar insists on a short religious service on club nights, while his curate is embarrassed at the heckling which this incurs. Similarly, in our own club we have wondered whether or not we should initiate direct psychological discussion of such problems as sexuality. We tried debates involving the whole club, on subjects chosen by the members themselves. These were very unsuccessful and threatened to reduce the attendance. We therefore tried smaller discussion groups in a side-room. These again were disturbed for a while by hecklers until we limited them to twelve more serious members. However, although the discussions then became interesting and printable, we felt that perhaps we had selected the members who needed such discussion least, i.e. those who could verbalize their problems. So we maintain that perhaps our general policy of influence by example and selective acceptance of the behaviour of the members is better than more didactic or analytical methods of leadership. We agree with Lyward, quoted by Burn (1956), that "ideals and standards are best left as stars to mariners rather than laid down like tramlines." (p. 228.)

Either due to the pleasant premises or to our own attitude, destruction of property has been minimal. Lyward (1961) has made a similar observation in his residential school for disturbed adolescents, which is sited in a beautiful Jacobean manor in Kent.

The only destructive episode in eighteen months was when a lampshade in the lavatory was broken by an airgun. A 'good' (ex-approved school) boy led the male therapist into the lavatory, where a vigorous and aggressive guest chose to take the blame. He was told that he should pay six shillings for the shade, and did so two weeks later.

Tests of the adults' attitude occur more frequently in other situations, such as in stealing and gate-crashing. These have been usually dealt with in other ways than those favoured by the 'good' members of the club.

For example, a patient came for his first visit with 20 members of a local gang, who disappeared after polite discussion of the formal conditions for membership. This avoided the fight favoured by our more virtuous members.

VOL. 2 1961

Apart from the discussion groups mentioned above we have tried other experiments in more active leadership. A charming teacher of ballroom dancing was found for us and partly financed by the local Youth Organizer. This experiment was not very successful. A guitar group played to the club with a luke-warm reception and no pupils volunteered, although the leader had offered lessons.

Another most important therapeutic factor is the appearance of the members. Many patients have expressed relief that the other members, although patients, look normal and attractive. This makes the idea of being involved with a psychiatrist more reputable and less frightening, and has even encouraged some of the more surly patients to communicate with us in words.

THE MEMBERS

Formal psychiatric diagnosis in adolescence is even less useful than with adults. Therefore we use quite unscientific words to classify our members. Changes in symptomatology are so rife in this age group that psychiatric labelling is not useful.

A. The silent

Many adolescents spend individual interviews in complete silence. Behind the silence lies a host of emotions, and the therapist has to be very intuitive to guess which predominates at any one time. Occasionally this silence can be accepted as something entirely positive described by Underhill (1911) as "a plane of perception for which human speech has few equivalents . . . characterized by an immense increase in the receptivity of the self and by an almost complete suspension of the reflective powers." (p. 317). In this case the silence, instead of being analysed as a neurotic defence, can be developed to something akin to meditation; which is very different from brooding or daydreaming.

Another adolescent with talkative nagging parents, may by silence be rebelling against authority in the form of the therapist who, he thinks, is also trying to mould him into another pattern. He may be so anxious about sexuality that he fears conversation will lead him to talk about it, and stays silent for this reason. He may fear being derided or punished if he expresses his thoughts; or that the therapist would tell his parents about them. He may even fear that by talking of his day or night dreams he may lose part of his personality without finding any new valuable experience to replace it.

The acceptance or interpretation of silence may be therapeutic, but it is often merely a heavy strain on both therapist and patient.

Most of the fears mentioned above are diluted if the therapist meets the youth in the company of his peers in a mixed club. In the club he can show his worth in other than verbal ways; e.g. one silent boy made our lampshades, another represented the club in the regional inter-club sports, and a third was dated by an attractive girl.

Some adult visitors worry that these withdrawn adolescents do not receive more intensive individual analytical therapy. They can be somewhat reassured by quoting the follow-up study (for from 16 to 27 years after diagnosis) by Morris and Soroker (1954). In this study of shy children who had *not* been continuously treated, it was

found that as many as 64·7 per cent were satisfactorily adjusted and 33·3 per cent marginally adjusted.

The following is a more detailed example of a silent boy who has done well during his attendance at the club.

William: at the age of 14½ had been excluded from a private grammar school because his work had deteriorated. The psychologist who tested him found that his I.Q. was 140, but was alarmed by his shyness and difficulty in verbal communication with adults. He had twelve weekly interviews with one of us. He would listen to the therapist's interpretations of his withdrawal and views on the problems of adolescence without comment. He produced beautiful drawings of landscapes with lonely figures. He also quoted two dreams. The last, after which he stopped dreaming, was: "Out of my house come animals in shells, crabs, tortoises, and armadillos. They are looking for water at the end of the garden." He seemed to agree that the shells might be related to his own armour of shyness. After this he ceased dreaming, the individual interviews were stopped and we made him a club member. He has attended the club regularly and his mother has commented that he now talks and laughs with the family. He has taken his General Certificate of Education and passed well. When his parents contemplated moving, he straight away looked up the route to the club from the proposed new house. In the club he has graduated from lone sitting to darts and chess; and thence to rather more raucous behaviour; and escorts girls to coffee bars after the club.

VOL. 2 1961

We must, for the purpose of this paper, try to relate treatment to his improvement. We choose to do so by regarding the major therapy as our refusal to regard him as ill enough for individual analysis, though still worthy of our attention in the club. What may have come across on a subconscious level is our optimism that the shelled animals would find the water on their own, once they had emerged from the house.

B. The independent

Other adolescents, after a few months of analytical psychotherapy, can deal more satisfactorily with their problems and are less tense, but are not prepared to go further in analysis, though still needing some support. This can be given in the club with less danger of the patient becoming heavily dependent on the therapist; and less risk of the therapist becoming bored. One such youth, who spent individual interviews playing chess with his therapist, said to her: "I don't need to talk about my home problems as long as I feel I could talk about them to you if I wanted to."

John is another example of an independent youth. He got himself referred at the age of 15 because of tension and depression. He had been excluded from school because of rebellious behaviour, and was studying for his G.C.E. "O" level on his own. He has many obsessive-compulsive trends, and used to play patience till the early hours for fear that a relative would die if he failed to complete the game. An adult purporting to be a psychologist had previously gained his confidence and attempted to seduce him, and he was frightened by the frequency with which he had been accosted by males. In individual sessions he discussed his emotional problems and many dreams. His last dream concerned "a good-looking friend who appears with his testicles hanging from his cheeks." After this his dreams stopped.

This dream probably concerned his latent homosexuality, but as by this time he had overcome his bouts of depression and was working well at a new school there seemed little point in trying to analyse this. Indeed he had not yet fallen in love with a girl, but we were rather relieved at this fact, as his G.C.E. "A" level was pending. He attends the club about once in three weeks and seems to like this informal contact. Very occasionally he asks for a private talk during the club.

C. The aggressive

Although, as indicated above, we have had little in the way of destruction of property or fighting on the premises, many of the members and guests are more than boisterous. Although behaviour such as stealing, quarrelling or interfering with the peaceful pleasures of others can be understood as an attempt to relate to the environment, it is notoriously more difficult to deal with than the frank display of nervous symptoms.

Morris, Escoll and Wexler (1956) have reported rather gloomily in their follow-up study of 90 aggressive children seen in a psychiatric clinic. Of 66 followed to the age of 18, thirteen had become psychotic and 39 never made adequate social adjustment. Twelve of the latter group committed at least one crime of record, though only one of these crimes involved violence or destruction.

Individual interviews, even when these acting-out adolescents have been placed residentially, are fraught with difficulties, as have been described poetically by Noshpitz (1957) and others.

It seems to us that a club can be useful for these adolescents. Certainly the way we deal with unruly members is closely observed by the others, who perhaps get some vicarious therapy in this way, apart from benefit to the unruly.

David, aged 15, became attached to the club originally as the friend of a patient. Although, we learnt later, that he was on probation, he has never admitted this. His nuisance value has always been great: he often spoilt games of chess by moving other boys' chessmen, he knocked over the dartboard; he led a gang of smaller boys to rifle a slot machine near the hospital, and was only saved from punishment by the kindness of the shop-owner, who knew the purpose of the club. He threw apple cores at the girls, was rude to the adults and eventually stole Coca Cola from the bar. One or two private interviews were offered soon after his arrival by the male therapist, but David then sat in stony silence interspersed only by denial of any problems. ("I am not a nut-case.") Later he was warned about bad behaviour and duly 'punished' by demotion from honorary member to associate member. On a further occasion when he threw a box at a girl, the provoked receptionist slapped his face. After these punishments he seemed more happy and friendly towards the adults, but still behaved in a disturbed way. A climax came with the theft of the Coca Cola. Other members demanded his suspension or exclusion from the club. The female therapist, however, explained the function of the club to them; and on his next attendance, to David himself. The male therapist had had doubts about the practicability of individual therapy, but after the woman's talk the boy seemed tearful and agreed to fifteen-minute interviews with the man every time he came to the club. At last he began to talk about his family and his underlying feeling of depression and insecurity.

D. Children of adult patients

Most of the children of our adult patients do not appear to need psychotherapy. This opinion is in line with Cowie's (1961) survey on the children of psychotics.

However some of the adult patients are very anxious that their offspring have some supervision. This anxiety can be relieved if we take the child into the club, and this measure also saves the child from the danger of becoming morbidly introspective which unnecessary psychological talks may stimulate.

Joan, aged 13, has a very disturbed though loving mother who suffers from a severe obsessive-compulsive neurosis, for which she was leucotomized unsuccessfully. Joan's brother attends our day school for maladjusted children, and the father attends for supportive interviews although he has left the family. The mother demanded treatment for Joan, who was said to be disobedient. After a diagnostic interview, instead of formal psychotherapy, we invited her to the club. As this was held in the hospital it was acceptable to the mother, who otherwise did not allow the child out in the evenings. We had the pleasure of encouraging Joan in her first experiments with dancing, and could comfort her after her first rejection by a boy friend. More mature girls befriended her, and kept contact when eventually she had to go to boarding-school. She still attends during holidays.

VOL. 2 1961

E. Prospective patients

The club is also useful for supporting and observing patients on the waiting-list who might not be able to have individual therapy for several months. All of these have a diagnostic interview before admission as a club member.

F. The sexually-orientated

Most youths and girls of this age are very interested in sexuality. For some extremists, however, the question of finding a partner in love or friendship of their own age becomes so intense that a relationship with an adult therapist becomes meaningless compared with this specific problem. It seems that often an appropriate person of their own age can help them more at this stage.

Jimmie, aged 17, was so withdrawn that schizophrenia had been suspected. His childhood had been disturbed and at the age of 11 he had been admitted to a mental hospital for a week. When he left school at 16 he passed an examination for a civil service job, but panicked on the first day and refused to continue work. He stayed at home mute, wringing his hands, for six months. Methedrine injections elsewhere had failed to make him abreact and so he attended the day hospital for occupational therapy and had weekly interviews with one of us. In these interviews he was tense and silent, often looking with suspicion over his shoulder, although he consented to draw. No dreams or information about his personal life were produced. After two months he joined the club, where for two meetings he stayed hunched in a dark corner of the main room. On the third evening he was accosted by an extraverted girl of the same age, also under treatment. This girl was not at all analytically-orientated and was able to be unconcerned at the boy's withdrawal. After her first one-sided conversation with him he drew a knife, which she removed. The next time she flirted with him, and he wept and trembled and left the club. However, after reassurance by one of us that intense emotion was a normal feature of adoles-

cence, he returned. The girl taught him to dance, and adored him vigorously and in public. He left the occupational therapy department, took a well-paid job and began talking volubly with his therapist about many subjects. He has been apparently stable for nearly two years under the girl's influence. Our acceptance of their relationship seems to have been important for both of them. The other members have been intrigued by the boy's obvious progress under the influence of love.

G. The intellectual

Certain children from highly intellectual families cannot in individual sessions be dissuaded from the idea that they can only please the therapist by brilliant conversation. In the club they can sometimes see for themselves that we are equally delighted by displays of other virtues such as humour, kindness and boldness. They may then begin to develop atrophied parts of their personality. (Alternatively they may withdraw from the club and seek activities of a more obviously cultured sort. In order to retain some of the latter we have started a drama group at the hospital on another night of the week.)

NON-ATTENDERS

We have studied the records of those adolescents who after one or two visits have ceased to attend, or have refused to do so even before seeing the club. Some of these have been of the more cultured type mentioned above. The rest have seemed to be those with almost overt signs of homosexuality, and we think that these may be afraid of falling in love with a homosexual partner under a psychiatrist's supervision. We give brief examples.

Henry, aged 15, enjoyed his individual sessions with a male therapist. When asked to practise active imagination he had phantasies of the therapist naked, and behaved in a very seductive manner when talking of these day dreams. Later he became a ladies' hairdresser. He attended the club only twice.

Alan, aged 14½, was referred because of transvestism. He co-operated in private interviews, but refused even to see the club, let alone become a member.

Mary, aged 15, only attended twice. She appeared to be much liked by the more cultured members. She had given many indications in her individual treatment of lesbian trends which she was unwilling to discuss, and made rather feeble excuses that she could not continue attending the club.

George, aged 18, was overtly homosexual. He grew angry when the therapist refused to find him a young boy-friend. At the club he made an abortive attempt to flirt with a boy and then, embarrassed, retired to the adult clubs where, although there were no homosexual partners of the tender age which he specified, he felt more protected against ridicule.

This accidental exclusion of more overt homosexuals may account for the very low observable incidence of homosexual flirtation in the club, when we consider Kinsey's (1948) figures, that about 8 per cent of the total sexual outlet is derived from the homosexual in boys in their teens (p. 261).

SUMMARY

A youth club in a day hospital is described. The sort of adolescent patients

who may benefit from this type of therapy are loosely classified, with examples. We have not been able to find other descriptions of similar ventures.

Acknowledgements—We thank Dr. Joshua Bierer for his encouragement, Mrs. D. Koestler who has worked with many parents of the adolescents, and Miss K. Leiningen and Mrs. J. Bentley for valuable work in connection with the club.

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VOL. 2 1961

J. child Psychol. Psychiat., 1961, pp. 286 to 292. Pergamon Press Ltd. Printed in Great Britain.

BOOK REVIEWS

C. J. C. Earl and H. C. Gunzburg: **Subnormal Personalities.** Bailliere, Tindall and Cox, London. Pp. xiv+338, 30s.

The late Dr. Earl was unable to complete his book but Dr. Gunzburg, who had worked with him at Monyhull and was familiar with his ideas, has very ably completed the text and seen the book through the press. The author here presents his theories and techniques of the clinical investigation and assessment of subnormal personalities, which is a subject wider than the personalities of the mentally subnormal. His tentative definition is: "Personality is that psychosomatic entity which we call the total organism, considered as a holistic system, observed mainly through its behaviour, and studied in the light of its history and cultural background".

Earl summarized his concept of mental subnormality from the constitutional, typological, maturational and temperamental aspects, and believed that the personality of every patient may be assessed under each of the following headings: weakness, simplicity, instability, immaturity, schizoidia, viscosity, neurosis, psychopathy and psychosis. At the sensorimotor level he assessed motricity and consciousness. The main section of the book deals with these various aspects of personality, illustrated by summaries of typical cases. Earl had a very wide experience of work with subnormals, and was able to draw on a wealth of clinical details as well as of original ideas. One is more convinced, however, of his sympathetic understanding of the human problems of the subnormal, and of his ability to help them in their practical difficulties, than of the validity of his theories as to how these problems originate.

The author's style of writing alternates between colloquial and sometimes witty descriptions of incidents with patients, and an over-nominalized permutation of his mostly unsubstantiated 'types', as in the following paragraph: "Mixed athletico-pyknosome mixtures may or may not show some viscosity, but the picture is complicated by immaturity with a marked tendency to immediate gratification, snapshot, short-circuit solutions when in difficulty. Physical immaturity, even infantilism, is sometimes superimposed on a basically athletoid physique; these cases are in childhood even more viscous than immature." There is by contrast a useful chapter on subnormal language, which stresses the need for the clinician, nurse or teacher to understand the children's meaning systems and the modifications imposed on their logic by their social attitude, before asking them to accept his own logic.

The final section by Gunzburg deals with clinical mental testing and describes Earl's Moron Battery of tests. Perhaps the most valuable chapter is that by Gunzburg on the treatment and training of adult subnormals, in which he summarises the latest developments in institutional and community care which have increased the subnormal's functional efficiency and the public's tolerance of his handicap.

This is certainly an unusual book which represents the author's pioneer work towards a new approach to and understanding of the subnormal. As Dr. Kenneth Soddy says in a foreword: "If the publication of *Subnormal Personalities* should result in a massive overhaul of current methods of ascertainment of educational subnormality and ineducability, a major reform will have been achieved that is completely in line with Earl's own life work."

L. T. Hilliard

K. Soddy: **Clinical Child Psychiatry.** Bailliére, Tindall and Cox, London. 1960. Pp. 462. 42s.

Coming from as renowned a contributor to the field as Dr. Kenneth Soddy, the present volume merits the closest attention. It is particularly timely, as there are few such comprehensive standard texts and most of them originate from American authors.

The aim is to provide a clinical textbook useful not only to those physicians, psychologists, and social workers who have specialized in this field, but also to the many other disciplines that in one degree or other are involved in the care and treatment of maladjusted children. With the emphasis on clinical background and usefulness, the author uses extensive case material to illustrate factors and influences under discussion. This does not, by any means, imply that the didactic side is sacrificed for this purpose. Quite to the contrary, the didactic material is, of itself, a very complete and lucidly presented set of formulations that encompasses most of the accepted precepts and some new and enlivening slants on current theory.

Believing firmly that the developmental approach is the most logical and illuminating one for the diagnosis and classification of children's disorders, the author adopts it for the organization of the presented material. After considering the conceptions and preconceptions, medical and lay, about the vexed question of inheritance, he gives in detail both the general picture of family life and the specifics of the culture in relation to child rearing. The psychological and physical implications of the processes of gestation, pregnancy, birth, the nursing period, toilet- and habit-training are presented. The demands made on both parents, the ways in which they meet them in terms of their maturity and personality, the consequent attitudes and modes of handling that they adopt are considered along with the different constitutional types of children, and the influence of these in turn on the parental reactions and feelings. Two constitutional continua are selected for emphasis—the hyperactive-hypoactive and the inturning-outturning scales. At each stage the task of the child in terms of learning and required pattern change is related to the help or handicap that the parents, particularly the mother, can provide. The dynamic nature of the relationship requires continual modifications on both sides, and the deleterious effects of adherence to out-dated modes of behaviour are illustrated in text and clinical presentations. Mental defect, psychosomatic illness and physical disability are given appropriate position with consideration of the reactions of parents and child to these handicaps and the unnecessary and avoidable effects that can emerge. The school years are again seen in close relation to the increasing requirements for social behaviour and conformity, the marked divergence of courses after the '11 plus' examination, and these social and scholastic hurdles are discussed in the light both of difficulties and the advantages of such a system. Throughout these chapters, the author selects a series of case illustrations that are vivid, apposite, succinct but complete, and allow a clear perception of the factors involved in each child's disturbance.

It is impossible within the ambit of one book to give equal emphasis to all areas of a rapidly widening field. Accordingly, the author has chosen to make the sections on adolescence and therapy brief and confined to broad principles. In some detail he deals with the process of examination and diagnosis in child guidance clinics and the roles of the personnel, and gives an excellent summary of psychotherapy and other modes of treatment and disposal. At the end, the author uses his proposed scheme of classification as a synthesis of what has gone before. He relies on syndrome classification rather than division by symptoms, and avoids the difficulties of trying to fit children into categories derived often inappropriately from adult practice.

Throughout, both in the case material and in the theoretical discussions, the dynamic interplay between the child, with his assets and liabilities, the parents, with their strengths and failings, and the wider society, is presented in a cogent and balanced fashion. Though the predominant approach is psychoanalytic, the author has his own emphasis in various areas, disagreeing for example with the orthodox view of the boy's 'castration anxiety'. He feels free to include ideas from other fields and from general medical practice. The overall rounded impression this gives is enhanced by the lack of dogmatism and the absence of jargon, and makes it a much more readable and clearly expressed exposition than the majority of similar writings. This ensures easier acceptance by, and greater usefulness to, the varied disciplines to which the book is oriented.

Such criticisms as might be made must be viewed against this solid achievement and, with one exception, do not detract from the overall merit. However, in a book keenly aware of cultural influences on children, one might have looked for some discussion of the effects, good or bad, of the mass medium of television, to aparallel the author's observations made on "favourite books". One

VOL. 2 1961

can but regret the brevity of the chapter on adolescence, which perhaps illustrates yet again the ambiguous and anomalous position that this era occupies between adult and child practice. In the discussion of therapy, there is no mention, except a passing reference to amphetamine, of the role of newer psycho-pharmacological agents. These are minor points compared with the absence, apart from occasional footnotes, of any bibliography or source of references. Inclusion of this would undoubtedly have enhanced the merit and overall usefulness of the book.

This comparatively (and mercifully) slim volume combines a lucid and concise exposition of theory with the distillate of a wide clinical experience. Its place as a standard clinical textbook for all those concerned with disturbed children seems assured.

Q. R. GRANT

J. TIZARD and JACQUELINE C. GRAD: **The Mentally Handicapped and Their Families.** Maudsley Monographs Number Seven, Oxford University Press, 1961, pp. 150, 28s.

THIS monograph reports the results of a social survey, the purpose of which was to investigate the problems faced by the parents of idiots or imbeciles during their childhood and adult life. Despite the volume of research on various aspects of mental deficiency, little study has been made of these difficulties.

Two samples, one of 150 families having an idiot or imbecile child at home, and one of 100 families having a similar child who had been in institutional care for between one to five years, were studied. The age-range of the mentally handicapped population was from pre-school children to adults up to 45 years old. The main data were obtained by interviewing parents and other relatives; supplementary information was sought from hospital and London County Council Health Department records, from the nurse in charge of the ward in respect of hospital patients, and by using standardized psychological scales. Throughout, comparisons are made between those living with their families and those in institutional care.

To assess the abilities of the two sub-normal populations, the Vineland Social Maturity Scale was used. Striking differences were found. The institutional group showed a very much greater proportion of low social ages, thus being retarded, in a technical sense, compared with those living at home. On the other hand, the institutional defectives were less backward in skills which contribute to ease of management; more were able to dress or feed themselves but fewer could speak or amuse themselves constructively. These findings are very similar to those obtained in studies of normal but deprived children living in residential care. Another difference between the two groups was that about 10 per cent of the sub-normal group living at home were gainfully employed in the community, but none of those who were cared for in hospitals. Since this survey, which was carried out in 1954, there has been increasing emphasis in some mental deficiency hospitals on training for simple employment; this may have led to these differences being diminished, at least to some extent.

A comparison of physical and mental health showed that the institutional sample contained a higher proportion with multiple handicaps of great severity. But in regard to social class, household composition and housing conditions, the two groups of families were very similar. The same was also true regarding the physical and mental health of the mothers and other members of the two groups of families. But the fact that in one group the handicapped member of the family lived at home resulted in considerable hardship. The authors make a strong case for giving special consideration to parents who are willing to look after their mentally handicapped child, and suggest how effective social intervention might make hospital care unnecessary in quite a few cases. Appropriate financial assistance, adequate housing, the provision of home helps to relieve house-bound mothers and facilities for outside leisure activities for the sub-normal, especially adults, are among the measures advocated.

Next, the effects of a mentally backward child upon family life are briefly considered. It is regrettable that Tizard and Grad were unable to explore in greater depth and detail these very important aspects about which so little is known. In view of their obvious success in winning the confidence of the parents they interviewed, one must hope that it will be possible for them to continue their study in this direction.

The final chapters deal with the medical, social and educational services as they affect the

mentally sub-normal and their families. It is here that the authors are forced to make the most severe strictures, which are all the more impressive because of the cautious and tentative manner in which the data are presented and interpreted. Enquiry about how and when parents were told of their child's handicap revealed "that in very many instances the communication of the discovery of mental defect was handled extremely badly". Unfortunately there is ample confirmation from psychological work with all types of handicapped children and from recent studies of the attitudes and opinions of normal adult hospital patients, that the withholding of medical information as well as the inadequate, and often abrupt, manner of giving it (which does not allow time for assimilation of the facts or for questions about them) causes unnecessary anxiety and prolonged resentment. In this survey it was found that nearly all the mothers of these mentally handicapped children wished to know the truth about their child's condition as soon as possible. The concrete suggestions put forward by Tizard and Grad in the concluding chapter would lighten what, at best, must remain a severe physical and mental burden. Providing more adequate medical, educational and social services may also, in the long run, result in financial economies since more parents may be willing and able to keep their children at home. Quite apart from the many intangible advantages, family care of the sub-normal will always remain less costly than institutional provision.

All the data are clearly presented and the authors forestall criticisms by scrupulously drawing attention to any weakness in design or method, and to possible unreliability due to faulty or biased recollection on the part of their informants. Similarly, a careful distinction is made between facts and their interpretation. This book should be required reading for all concerned with the mentally handicapped, whether their interest lies in the field of research or in clinical and advisory work.

M. L. KELLMER PRINGLE

VOL. 2 1961

Cross-cultural Studies in Mental Health. Edited by K. SODDY. Tavistock Publications 1961, pp. 271. 25s.

THE main object of these studies is to examine conceptions of mental health current in Western societies and to inquire how far they are 'exportable'. This is clearly a worthwhile effort both theoretically and practically, since work in the various fields of mental health inspired by Western ideals is now being undertaken in all parts of the world. The results of the inquiry are presented in the form of a report based on discussions by a group of members of the Scientific Committee of the World Federation of Mental Health. They deserve high praise for undertaking what is virtually a pioneering investigation, but it is very doubtful whether they have succeeded in overcoming the difficulties inherent in planning an inquiry in a matter so complex. These appear to be of two kinds, arising on the one hand from the scrappiness of the data, and on the other from the vagueness and obscurity of the central conceptions used to interpret them. Thus the data on what they call value systems are derived partly from the literature on comparative religion and morals and partly from oral evidence. But no indication is given of the methods used in appraising or evaluating the evidence. To illustrate variations in morals, selected passages are cited from the great religious writings of the world. But these are generally in the form of counsels of perfection, and throw little light on the working code of morals or on the degree to which practice conforms to precept. The psychiatric evidence on the incidence of mental illness in different cultures, or of the ways in which different types of illness are related to variations in social conditions, is not given in any detail, though the Committee presumably had it before them in reaching their conclusions. It should be added, however, that the authors of the report are well aware of the inadequacy of their data and that their conclusions are stated tentatively, and often in the form of questions opening up areas for further study.

The difficulties arising from the lack of agreement on the definition of the central conceptions used in the study of mental health are perhaps even more serious. The authors cite various definitions of mental health, such as those which identify it with the condition in which the individual is enabled fully to realise his potentialities in harmony with others, or with the adjustment of the individual to social requirements, or with the capacity to live harmoniously in a changing environment. They accept none of these definitions without reservations. On the other hand, their own view does not emerge very clearly. While at some points their conception of mental health is very inclusive, approxi-

mating it to the *summun bonum* of the philosophers, at others they even doubt whether mental health is a constituent or only a condition of the good life. One cannot help thinking that terms like 'mental health', 'the good life', etc., are too broad for purposes of comparative study. To facilitate inquiry mental health should be analysed in terms of the major functions, physiological and psychological, of the organism; the good life in terms of the various 'goods' or values recognized in a society and the rules of conduct related thereto. It is usual to speak of 'the Western way of life', 'the Christian way of life' or 'the Buddhist way of life'. But these are in fact highly complex, containing within themselves different and even contradictory ways of life. Likewise, maladjustment, social deviation or crime are not single entities. It follows that without a good deal of preliminary classification we cannot hope to determine with any precision how mental health, individual and social well-being are related in our own or in other societies. There are in the work before us suggestions towards such classifications, but these are not brought together or worked out in any detail. From the theoretical point of view the value of the work is thus exploratory rather than systematic. On the practical side there is a very interesting discussion of the problems likely to be encountered by those engaged in mental health work in different cultures.

M. Ginsberg

Lectures on Experimental Psychiatry. Edited by Henry W. Brosin, Pittsburgh, University of Pittsburgh. 1961. Pp. vi+361, $7.50.

The topics of the seventeen chapters range from neuro-anatomy to social anthropology, and there is something for everyone in this symposium, which was held at the Western Psychiatric Institute and Clinic in March, 1959, to mark the bicentenary of the University of Pittsburgh. If every taste is catered for, however, there is a substantial meal for no one.

The organizers followed what has been the fashion and brought together prominent experts from many different disciplines. Three-quarters of the contributors would certainly appear in any list of the foremost fifty in mental-health research in America. Those not so qualifying were local residents, and there are no surprises. Elkes represents neuropharmacology, Gerard neurophysiology, Kubie psychoanalysis, Alexander psychosomatic medicine, Hilgard experimental psychology, Liddell experimental neurosis, and so on.

Books like this have a certain value because they introduce senior students and the newly qualified to many exciting possibilities for research with applications in psychiatry. Yet they do a disservice by showing them work much less good than that the contributors usually do. The contributors have been spared the toil of writing and re-writing in order to present their ideas precisely and concisely, for their lectures have been printed as they may have been spoken. Little editing has been done, in accordance with views that editing tends to detract from the informality and relaxation, and the bonhomie and the cut-and-thrust of debate; and perhaps that it is often more interesting and stimulating if it is not entirely clear what the contributor intended to say.

D. Russell Davis

James Farndale: **The Day Hospital Movement in Great Britain.** Pergamon Press, Oxford and London, 1961. pp. xvii+430, 84s.

Since Bierer started the first day hospital for psychiatric patients in Britain in 1946, the movement has developed and spread. The author, who is deputy house governor of the Bethlem Royal Hospital and the Maudsley Hospital, London, has carried out a very detailed survey of 65 day hospitals and centres visited by him in 1958–9, while an honorary research fellow in the University of Manchester. He has examined their origins, development, organisation and functions with particular emphasis on the administrative, economic and social aspects. He presents a mass of carefully assembled data, readily accessible to the reader and of considerable practical use to anyone who is planning a day hospital project. It seems that the advantages for certain psychiatric, geriatric or mentally subnormal

patients who live within reach and are suitable for the régime, have been proved. The author is, however, cautious over accepting that there may be any considerable financial saving compared with in-patient facilities.

As far as children and adolescents are concerned, some day hospitals do admit a few patients of adolescent age, while one day club offers facilities for some parents and children attending a child guidance clinic in the same building. There is only one day hospital for psychiatrically disturbed children, a part of the Child Psychiatric Out-patient department of the Newcastle General Hospital, which is unfortunately only mentioned here in a footnote. It is clear that so far the use of day hospital treatment for psychiatrically disturbed children or adolescents has hardly been seriously considered. This may be because of the more urgent need for in-patient facilities for these age groups, which is still largely unmet. Moreover, there have been the mostly successful provisions for children deemed as 'maladjusted' under the Education Act, 1944. However, the Royal Medico-Psychological Association has recently drawn attention to the need to set up other kinds of unit for emotionally disturbed children and adolescents apart from in-patient units (*J. Ment. Sci.*, 1961, **107**, 354) including day hospital accommodation.

There are undoubtedly a number of psychotic or brain-damaged children who are not suitable for any kind of school and who could benefit from daily psychiatric care, with relief to their parents. There is such a day hospital unit in Montreal. Again, there are phobic adolescents whose particular symptoms might well benefit from a day hospital régime; or could it not be useful for the treatment of some of the many cases of 'school phobia'? These possibilities readily come to mind, and it would be of interest to learn of the experiences of the day hospital for children in Newcastle. It could well be a prototype for further experiments in this field.

W. WARREN

VOL. 2 1961

T. C. KAHN and M. B. GIFFEN: **Psychological Techniques in Diagnosis and Evaluation.** Pergamon Press, 1960, pp. 145. 40s.

THIS book has been written mainly for persons whose professions involve contact with psychologists, the aim being to provide ". . . an understanding of what a psychologist is, how he functions, and how he arrives at his conclusions".

It does not claim to contain an exhaustive account of all techniques and tests used by the psychologist, but briefly describes some of these by way of illustrating the aims set out above. Although the authors take pains to point out that they do not restrict their ". . . illustrative material to tests whose use is universally sanctioned on the basis of scientific validity", one might have expected considerations of validity and reliability to play an important part in determining the choice of such materials. Failure to do so could only result in giving a misleading impression to those for whom the book is primarily intended, and who are presumably least well-placed to form sound critical judgments in this field.

Looking at the section entitled: "Tests Designed to Measure Brain Damage", one finds that three out of the five tests quoted have been repeatedly shown not to discriminate in the way intended. It seems at least possible that the fourth test falls into the 'doubtful validity' category only for lack of systematic attempts to validate it.

The fifth test in this section, the Grassi Block Substitution Test, apparently owes some of its perfect discrimination between brain-damaged and other patients to the fact that certain individuals who fell in the misclassification area were eliminated as being readily identifiable on the basis of characteristics other than their test performance.

A similar, if not rather more depressing, picture is obtained from the chapters entitled: "Identification of Schizophrenia, and Assessment of Neurosis". Of the eight tests more fully described in these two sections, none could be said to have clearly established validity for diagnostic purposes, to say nothing of questionable reliability. This choice of tests and techniques is puzzling, when one considers the firm line adopted by the authors in discussing validity ("A technique without some form

of validity cannot be considered a test") and reliability (". . . no test should be used until reliability has been established").

The authors erect a dubious defence against this form of criticism. They argue that although present psychological tests are inadequate, there is no substitute for them, and add this challenge: "It would be interesting to see how much better their (presumably the critics') proposed methods would be than the tests in present use".

The material presented in the chapter on "Evaluation and Testing of Children" is not only disproportionately short, but also suffers from the deficiencies referred to above. The sample of materials presented in this section might lead the reader to form very curious impressions of the tests available in this field, including a false idea of the importance of Kahn's own test, the K.T.S.A.

The aims of this book are praiseworthy, as there is a great need for a work to span the gap left by introductory undergraduate texts. However, Kahn and Giffen fail in this task, not for reasons of poor presentation, but because the material which they do present can only form a harmful and misleading impression. They also fail on a second count, that of not paying due consideration to the traditional role of the psychologist as an experimentalist capable of conducting investigations into the single case without necessary recourse to formal 'tests'.

H. R. Beech

VOL.
2
1961

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